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CONTENTS

SYMPOSIUM ON BEHAVIOR DISORDERS

Foreword	*Harry Bakwin, M.D.*	559
Office Management of Everyday Problems	*Stuart M. Finch, M.D.*	561
Drug Therapy in Behavior Disorders	*Alfred M. Freedman, M.D.*	573
Eating Problems	*Alfred S. Schwartz, M.D.*	595
Obesity	*Hilde Bruch, M.D.*	613
Sleep Disturbances in Children	*Hale F. Shirley, M.D.* *Jacob P. Kahn, M.D.*	629
School Phobia: Diagnosis, Genesis and Clinical Management	*Leon Eisenberg, M.D.*	645
The Management of Mental Retardation	*Lawrence B. Slobody, M.D.* *Margaret J. Giannini, M.D.* *Howard R. Kelman, M.S.W.* *Harold Michal-Smith, Ph.D.* *John B. Scanlan, M.D.*	667
Behavioral Syndrome Associated with Brain Damage in Children	*Archie A. Silver, M.D.*	687
Schizophrenia in Childhood	*Harry Bakwin, M.D.* *Ruth Morris Bakwin, M.D.*	699
Early Infantile Autism	*Leo Kanner, M.D.* *Leonard I. Lesser,, M.D.*	711

The Psychological Aspects of Asthma in Children	*Mildred Creak, M.D.* *Joyce M. Stephen, M.B.*	731
Constipation and Fecal Incontinence	*Murray Davidson, M.D.*	749
Juvenile Delinquency: Medical Responsibility	*Preston A. McLendon, M.D.*	759
Masturbation in Children	*George H. Schade, M.D.*	767
Problems of the Adolescent	*J. Roswell Gallagher, M.D.*	775
Emotional Problems of the Adolescent Girl	*Robert E. Nixon, M.D.*	789

CLINIC ON OTHER MATERIAL

Neonatal Candidiasis	*Philip J. Kozinn, M.D.* *Claire L. Taschdjian, B.Sc.* *Harry Wiener, M.D.* *David Dragutsky, M.D.* *Arnold Minsky, M.D.*	803
Cumulative Index		817

FOREWORD

HARRY BAKWIN, M.D.

Consulting Editor

The task of caring for most behavior problems in children falls, necessarily, on the general physician, since problems are many and child psychiatrists few. But there are other, equally valid reasons for participation of the general physician in this field. Most parents prefer to discuss their children's problems with their own doctor and look upon the psychiatrist with suspicion. The physician, knowing the family as well as the child, is in a good position to handle problems which stem from family disharmony. Moreover, going to a psychiatrist is costly, and the expense may create a greater problem for the family than does the youngster's deviation. Then, too, the general physician has, probably, a better understanding of normal child development than has the psychiatrist, whose experience, in the main, is limited to the mentally ill.

This is not to say that there is no function for the child psychiatrist. Indeed, he serves three extremely important functions—as consultant, teacher and investigator.

Most children's "problems" are trivial and transient and require only a common-sense approach—and the passing of time—for their solution; others are more intricate and demand some knowledge of child development and child psychiatry; still others are expressions of deep-seated emotional disruptions and need the specialized attention of the expert.

The papers in this volume have been selected to assist the physician in understanding and managing the everyday behavior problems of children. Attention is given also to more serious problems so that the physician may be in a position to recognize the warning signs of deep-seated emotional disturbances for which psychiatric help is indicated.

OFFICE MANAGEMENT OF EVERYDAY PROBLEMS

STUART M. FINCH, M.D.

Every pediatrician and every general practitioner recognizes, or should recognize, the relatively common existence of emotional problems in his child patients. It is their task to make certain basic decisions in these problems. They are aware that no child has ever grown up without at least transitory evidences of emotional disturbance, so that they do not become overconcerned with every small evidence of such difficulty. Yet the physician also realizes that children are in the formative years of emotional growth and that psychological problems can easily develop which will become permanent and thus detrimental to an eventual adult adjustment. The physician, if mature and well trained, is, therefore, concerned with the children's emotional problems whether severe or mild, transient or chronic, and whether they require corrective treatment or not. He knows that he stands in the important position of "preventive psychiatrist," and he is willing to assume this role.

The general practitioner or pediatrician assumes much the same attitude toward emotional problems in children as he does toward their physical illnesses. Here he advocates measures which will enhance physical health, and he combats factors which will impede it. It is the same with emotional health. He knows that neither physical nor emotional maturation occurs without some minor irregularities and transient problems, but he remains observant of the over-all factors which operate in the direction of physical and emotional health, and he is quick to attack those forces which diminish health. He is oriented toward the whole child and desires to see this youngster grow eventually into a physically and mentally healthy adult.

Emotional growth in a child is not an even, steady process. Different

children do not mature emotionally at exactly the same rate, nor with exactly the same manifestations. In general, however, certain broad "norms" can be established for emotional maturation. Gross variations from these "norms" are evidence of emotional problems, and the alert physician will note these readily. If we assume, in a given child, the presence of adequate hereditary and constitutional endowments, gross pathological variations in the youngster's emotional growth will usually be found to stem from adverse effects of the environment upon him. Simply put, the average child will mature satisfactorily in a reasonably healthy environment, but will have difficulty if exposed to chronic emotional distortions in this environment. The physician realizes this and is ready to deal with such factors if they arise.

EMOTIONAL GROWTH IN THE NORMAL CHILD

Medicine has long recognized that if a physician is to diagnose and treat the abnormal properly, he must first know the normal. Anatomy and physiology form the foundations for the study of pathology, and

TABLE 1. *Normal Psychological Characteristics and Needs*

AGE LEVEL	NORMAL PSYCHOLOGICAL CHARACTERISTICS	"NEEDS"
Infancy (oral phase)	Dependency. In the first 6 months primarily a parasitic type of dependency. In the second 6 months aggression begins to appear (e.g., biting, etc.)	The infant needs "total" care—both physical and emotional. Personality of the mother is of primary importance.
Toddler (anal phase)	Obstinate, rebellious, stingy, messy, ambivalent (mixture of love and hate), but still quite dependent	Some gradual, consistent training, with constant love and meeting of dependent needs. Mother still primary, but father of increasing importance
Nursery school, kindergarten and first grade (oedipal phase)	Increasing awareness of an interest in own sexuality and parents' sex. Possessiveness toward parent of opposite sex, with some jealousy toward other parent	Acceptance of the child's interest and hostility without either seductiveness or counterhostility
Elementary school (latency phase)	Identification, especially with parents, is prominent, as well as rapid learning ability and diminished dependency	Adequate family identifications within the family and good school system
Teens (adolescent phase)	Stormy, with alternative expressions of dependency vs. independency, instinct vs. asceticism, child vs. adult	Flexible parents who allow emancipation and still maintain the previous basically good relationship with the child

in the same way a knowledge of normal emotional development must precede the ability to recognize and treat psychopathology.

Under optimal conditions the normal child presents an ever-changing picture of psychological characteristics as he grows from infancy toward his goal of maturity. These characteristics will vary as to their time of appearance and their intensity from one child to another, but the general course in every normal youngster is toward maturity. As the child passes through these various levels of emotional growth he develops certain psychological needs and manifestations and makes certain demands upon his environment, particularly his parents. If these demands or needs are adequately met, the youngster continues his maturation. If they are not, he may begin to reveal signs of emotional problems.

At the risk of oversimplification, some of the "normal" psychological characteristics of emotional growth at various ages can be charted along with some of the needs of the child at these ages. It cannot be overstressed that these "stages" are fluent and merge into each other in a way that makes clear separation of them impossible. It is fortunate that the mature parent is intuitively attuned to the needs of a youngster at any given time and that such a parent does not operate by an artificial scheme. However, the parent with emotional difficulties cannot function so intuitively and frequently needs specific assistance and guidance in forming a healthy and helpful approach to his child's developmental stages.

ETIOLOGY OF EMOTIONAL PROBLEMS

The child's healthy emotional growth thus depends to a great degree upon the meeting of his emotional needs. While he continues to need a feeling of love and acceptance, his emotional maturation is equally dependent upon certain well-timed and consistent demands made upon him to achieve gradual conformity to the standards of the social world he must live in. It is reasonable to say that mature parental warmth carries with it a judicious level of demand from the child for conformity. Conversely, it can be said that excessive, insufficient or inconsistent demands upon a child stem from inability of the parents to love the youngster in a realistically mature manner.

Here again, at the risk of oversimplification, an attempt will be made to chart these factors and to show some of the most common ways in which psychopathology is generated in a child and what factors in the parental personalities are prominent. This chart also makes no claim to completeness, but attempts to outline some of the most common problems and some of their causes.

TABLE 2. *Parental and Environmental Sources of Emotional Problems*

AGE LEVEL	ORIGIN OF PARENTAL ATTITUDE	PATHOLOGICAL ELEMENTS IN ENVIRONMENT
Infancy	Fear of failure as a mother	Maternal anxiety
	Unconscious resentment of child	Maternal overprotection
	Overt resentment of maternal role	Maternal rejection
Toddler	Compulsive parent (usually mother)	Too many demands too soon
	Disinterested parent or "modern" parent who fears making demands on the child	Too few demands too late
Nursery school, kindergarten and 1st grade	Parental problem with sexuality (overt or repressed)	Seductiveness toward child (overt or unconscious); inhibition of child's normal sexuality
	Problem accepting hostility of the child	Counterhostility toward the child in overt or disguised form (e.g., becoming ill when child is aggressive)
Elementary school	By the time the latency period sets in, the extension of previous distorted parental attitudes produces further and more structuralized problems in the child. The anxious parent continues in this vein. Educational difficulties often ensue in the child. Identification problems also become prominent as a result of lack of good parental figures with whom to identify	
Adolescence	The parent is strongly defending against his own unconscious impulses of a "delinquent" nature	Parental rigidity, often with a subtle parental encouragement of adolescent delinquent activity
	Parental unconscious fear of growing older (i.e., having grown children)	Refusal to allow the adolescent a reasonable degree of emancipation
	Immature, self-centered parent unable to assume responsibility for child	Totally permissive parent with no supervision of child

COMMON TYPES OF EMOTIONAL PROBLEMS

The particular emotional problems and symptomatology which develop in the individual child will depend upon several factors. For example, the type of abnormal parental attitude and the length of time to which he has been exposed to it are important in determining his eventual symptomatology. Once a youngster has begun to show emotional problems, secondary factors come into play. These include the response of his parents and others to his psychiatric disorder, and may either exaggerate or diminish his difficulties.

A youngster with emotional problems is one whose normal psychological maturation has been slowed or arrested, at least in some area.

This means that he still has within himself certain immaturities which, although normal at an earlier age, are no longer so at his more advanced age. Once the child has perpetuated these immaturities, there are several possible ways in which he may attempt to deal with them. For instance, he may try to hide them from himself and others through an elaborate system of defenses. He will then present a neurotic picture. This is true, for instance, in the phobic child, in the chronically anxious child or the compulsively "too good" child. Another youngster may choose to accept the immaturities inside himself and to express them openly. He will then present a picture of a character disorder in that his behavior becomes aberrant. Such a youngster may be chronically aggressive or abnormally passive or may show some other warped character formation. Another child with even greater immaturities may find living in the real world impossible and thus relinquish his hold upon reality. He will then become psychotic. There are still other children who find partial outlets for their immaturities and conflicts in one or more of their physiological systems. These children suffer from psychophysiologic disorders. Usually a disturbed child will present a mixture of at least two or more of these possibilities, rather than any clear-cut single entity described above.

The parent of an emotionally disturbed child is most apt to present to the physician as a chief complaint one single symptom or one characterological aspect of the child. Such a parent usually does not see the many other evidences of emotional disorder which the youngster presents. For example, the mother of an enuretic child may complain about the youngster's wetting, and yet fail to recognize that the child has other problems. She wants a remedy for the enuresis and is not prepared to look into the over-all emotional adjustment of the child and the family. Yet if the symptom is to be understood, such investigation is necessary. In medicine one does not treat a symptom until one is certain of its etiology.

A psychiatric symptom, like any other in medicine, may have several possible causes. No physician, for instance, can know immediately why a child steals any more than he can know immediately why another child has a cough. The doctor must examine the situation and the child more thoroughly before deciding upon etiology and thus upon a treatment plan. As he proceeds with his examination he has several possibilities in mind, and the knowledge of these possibilities enables him to arrive at a correct diagnosis more quickly. In an attempt to clarify this approach some of the more common complaints of an emotional origin can be discussed briefly. It would be impossible for the list to be complete, or for all the etiological possibilities of each complaint to be presented. However, the examples given here may

serve as a framework upon which further knowledge and understanding can be built.

Eating Problems

Eating problems (see also p. 595) are probably the most common complaint of emotional origin in children. They often make their appearance during infancy or during the second or third year of life. The parent worries that the youngster eats too little, prefers only a limited number of foods, refuses many foods and makes mealtimes unhappy for everyone. Usually such a youngster is exhibiting a passive resistance in an area which he has found is of special importance to his parents. He has discovered, for instance, that his mother's emotional well-being depends upon his nutritional intake. He will then eat if he happens to be pleased with her and will refuse to eat if he is irritated with her. His mother is often insecure about her maternal ability and allows her child's dietary intake to become symbolic of whether or not she is a good mother. In his use of eating as a means of expressing pleasure or displeasure toward his mother, his hunger ceases to dictate the amount of his intake. The entire situation becomes a vicious cycle, and after a few years its origins seem lost.

The practical management of such a situation requires help for the mother to "back off from the area of combat." She needs assistance in understanding that her child's own physiology will ensure a reasonable dietary intake, but only if she can prove to him that she will no longer over-react to his eating. She needs help in gaining more security about her ability as a mother, and she needs support while she attempts to assume the new attitude toward the youngster's eating.

Anorexia nervosa is another eating problem, but one of entirely different origin. It most commonly occurs during adolescence and represents severe psychopathology which is often close to psychosis. Eating in such youngsters becomes unconsciously symbolic of forbidden sexual and aggressive impulses. This syndrome also represents a massive regression to earlier childhood and a refusal to grow up. This type of case usually requires a combined pediatric and psychiatric approach. Forced feedings and bribings are relatively useless. It is necessary to deal with the basic psychopathology, and such extensive psychiatric treatment is so tedious and time consuming that it is not within the scope of the general practitioner or pediatrician.

Dawdling

Dawdling is a frequent complaint about smaller children, and in some of them it reaches remarkable proportions. Most preschool

children dawdle during these years, and a certain amount of this behavior is within normal limits. If it becomes excessive or is prominent during the grade school years, it often represents an emotional problem. Like the eating problem, it indicates an area of passive resistance to the "nagging" parent. The child does not choose a pattern of overt rebellion for fear of punishment or loss of love, but accomplishes his purpose of resisting his parent and expressing resentment in a passive manner.

The management in these cases involves assistance for the parent in recognizing the youngster's symptom as a response to too much parental control and too little independence. The usual response of a parent to such a suggestion is, "But if I didn't get after him, he wouldn't do anything at all." Actually, of course, this is not completely true. Every child has a certain amount of curiosity, interest and drive to be reasonably conforming, so that he will participate in many things if he does not feel coerced to do so. As with eating problems, the focus of the activity shifts from a natural activity on the part of the child to an area of battle with his parents in which he can express, unconsciously and without real threat of retaliation, his own hostile reaction to his parents' behavior. The youngster realizes that his parents are upset if he is slow, and so he uses this symptom on many occasions. However, if he can become convinced that parental over-reaction is no longer present, he will gradually begin to do things for their inherent value and as a result of his own desire to do them. The longer dawdling has existed, the more time and support will be required for the parents to help them see the child through the phase of readjustment.

Enuresis

Enuresis is not only one of the most common complaints of emotional origin during childhood, but also one of the most bothersome to parents. As used here, the term "enuresis" applies to those children who wet themselves either day or night for emotional and not organic reasons after the age of four or five years. The majority of enuretic children have never really achieved prolonged adequate urinary control, although there is a smaller group who did attain such control, but subsequently lost it. More enuretic children wet themselves at night than in the daytime, and diurnal enuresis is frequently a more serious symptom. Enuresis itself is a rather protean symptom, and it may appear in seriously disturbed children or in those with mild psychopathology. It may be constant or intermittent, and it may cease at almost any age and for almost any reason, from intensive psychotherapy to tonsillectomy. In summary, this symptom is in itself meaningless as an indicator of the severity of a child's emotional problems,

and it is almost impossible to predict its future course. However, it frequently ceases spontaneously at puberty or soon thereafter.

Children become enuretic for many reasons. These may include the severity of toilet training, regression under psychological stress, hysterical identification with an incontinent parent, fantasied mutilation following surgery or injury, or various other causes. Over half of all enuretic children are primarily identified with the parent of the opposite sex rather than with the parent of the same sex. In other words, the boys are more passive and the girls more aggressive than average.

The management of this symptom involves obtaining a sufficient understanding of the family to allow some assumptions as to the etiology of the symptom. It also includes evaluating the family attitude toward the symptom itself and whether punishment, shaming or other approaches have been utilized. These family attitudes will often lead to a secondary gain for the child. Measures should be taken to rectify pathological family attitudes which initially caused the symptom, and also those which may have subsequently intensified and perpetuated it. Many pediatricians and general practitioners have adopted certain other adjuncts to the treatment of enuresis. They will suggest, for instance, that the parent award the child stars on his calendar for every dry night he achieves. They may recommend the administration of one of the belladonna group of drugs in the hope of curtailing urinary secretion. They may suggest awakening the child at night before he wets himself. They may also suggest the limitation of fluids after a certain time in the late afternoon or evening. These methods are useful only when the parent-child relationship is basically sound and when the child himself is a willing participant in the suggested procedure. Otherwise such methods may only intensify the previous conflict between parent and child.

Temper Tantrums

Temper tantrums are a normal part of the toddler phase. At this age they stem from the youngster's attempts to control his instincts in such a manner as to please his parents. The two- or three-year-old has such an immature ego that episodic temper tantrum outbursts occur. The youngster ventilates his hostility toward his parents, expressing "You don't love me and you want me to do everything." It is as if he has tried to control himself for as long as he can tolerate, and finally his resentment against parental controls bursts forth in a tantrum. When temper tantrums occur with excessive frequency or severity or when they continue beyond the toddler age, they indicate psychopathology. They then represent a result of either too many or too few parental demands. Excessive parental rigidity puts the child's

ego under too great a strain, and his hostility bursts forth episodically in the form of tantrums. Conversely, a lack of parental demands, usually coupled with prolonged overprotection, will lead to an ego which has never learned to cope with instinctual postponement. Such a youngster eventually reaches an age at which he begins to demand even more than his doting parents can give him, and he has tantrums whenever he meets frustration.

Obviously the management of either type of case will be based upon the etiology. Suggestions may have to be made toward more parental firmness and consistency or toward more parental relaxation and flexibility. It is essential that the physician first make himself acquainted with the family situation. He cannot rely only upon parental statements about their requirements of the child. Many parents do not realize in which direction they err. The physician himself must be prepared to evaluate intuitively what the parents are telling him regarding their demands for conformity or lack of them and then take appropriate steps to correct the situation.

Rebellious Behavior

Sassy, impudent, rebellious behavior is a sort of opposite behavior from dawdling in that it represents an active rebellion rather than a passive one. This type of behavior may occur when the child is so angry and has such poor relationships with his parents as to fear neither punishment nor the loss of love. It also may occur when the child feels omnipotent as a result of the lack of parental controls. Thus there is some similarity to the two causes described above for temper tantrums: either too much punishment and excessive demands or too few demands and too little firmness. The parents of sassy, impudent youngsters often react inconsistently or without unity, the father demanding one thing and the mother another. They contradict each other, and their attitudes are at variance. Such parents should receive considerable guidance and and advice regarding the child's need for parental unity in providing realistic, consistent demands and continuing love and acceptance.

Sadistic and Destructive Behavior

Sadistic and destructive behavior is another pattern which is relatively common and normal during the toddler years. Most two- or three-year-old youngsters will destroy things if given the opportunity and often find pleasure in inflicting pain upon others, including household pets. However, when this behavior is perpetuated beyond this age, or present to an exaggerated degree, it is usually the result of parental

care which is unloving, unrealistically demanding, and at least unconsciously sadistic. The over-all family philosophy will be found to be that of "crime and punishment." The normal sado-masochism of the three-year-old will permit him to seek and even to enjoy the punishment he receives for his misdeeds. However, it may hypertrophy into well established pleasure in inflicting as well as suffering pain, when this behavior is part of his family pattern. Such parental sadism and masochism may be on a verbal level rather than a physical one and carries with it an inability to love the child in a mature manner.

If this syndrome is discovered early, it may be remedied by assisting the parents in increasing their approval and love for the child and diminishing the rejection and punishment they have meted out. If such a pattern is discovered later—for instance, during the elementary school years—it may often require formal psychotherapy. Once such a pattern becomes firmly established, it is a sort of closed circuit in which the child gets pleasure from causing pain and subsequently from suffering it as he is punished.

Episodic, Impulsive, Explosive Outbursts

Such outbursts may stem from a variety of causes. They may represent the aftermath of organic brain damage which has made instinctual control within the child inadequate. They may also be the result of emotional problems. For example, a boy raised by an overprotective mother may develop an extremely passive character during his first 10 years. He may then begin to rebel against this passivity and may try to bury it under a layer of pseudo-aggression. Whenever his passivity is stimulated, he reacts with an outburst of aggression.

The management of episodic, impulsive outbursts will obviously depend upon the etiology. The child with a postencephalitic syndrome needs an unstimulating environment and long-term retraining. If he is seriously brain damaged, he may need hospitalization over a period of years. The child who is aggressive as a defense against basic passivity needs help in understanding himself. His parents also need a more thorough understanding of him. Either type of case, if severe, may be beyond the realm of the pediatrician or general practitioner and may require specialized psychiatric help.

GENERAL PRINCIPLES OF MANAGEMENT

It is of course natural that both parents and physicians would like to find simple, clear-cut solutions for the correction of the emotional problems of children. However, since most of the psychopathology of the child stems from problems in the personalities of his parents, such

simple answers cannot possibly be forthcoming. If a mother is overprotective, she is so because of her own inner needs and not necessarily because she is convinced that this is the best way to rear a child. Most such mothers are aware of their tendency to overprotectiveness and have made efforts to diminish it. It does not suffice merely to tell such a mother to stop being overprotective. Her ability to alter this attitude will depend in great measure upon her relationship to the physician and the tact and skill he uses in helping her understand what she is doing and why.

The general practitioner and the pediatrician rarely practice psychotherapy with children. Their usual and most effective approach to children's emotional problems is through parental guidance. This means that an ability to understand and work with parents is an essential part of pediatric work. The physician will find, however, that it often is a relatively simple task to persuade a family to accept a diagnosis of organic illness and to cooperate in the necessary medical regimen, whereas he may meet considerable resistance to any suggestion of disorder in the family's emotional pattern.

Mention should be made of the use of tranquilizers in the various syndromes discussed above. In general, these preparations find less usefulness in children than in adults. No child should be given a tranquilizer until the physician has thoroughly studied the physical and emotional problems and their origins, nor should a tranquilizer be used as a substitute for psychotherapeutic help. It would be unfortunate to begin such a drug with the idea that the youngster would have to take it the rest of his life. It would also be a mistake to prescribe a tranquilizer with the idea that a youngster will soon grow out of the emotional difficulties spontaneously.

It is impossible to predict which youngster may have a favorable response to a tranquilizer. Certain situations may indicate a trial of a tranquilizer if it is used in combination with adequate psychiatric and medical measures. The prepsychotic adolescent may derive some benefit from these drugs, especially if they are used in conjunction with psychiatric treatment. Certain children with anxiety may become somewhat calmer with tranquilizers, although they do not respond as well as the anxious adult. In such situations the tranquilizer is only a temporary measure secondary to treatment of the underlying emotional problem. Occasionally a brain-damaged child may be made less impulsive through the use of these drugs, and this is one of the few situations in which more prolonged administration may be necessary.

The wise physician has several steps through which he goes in evaluating and treating emotional problems in children. These may be listed as follows: (1) Determination of the degree and type of emotional problem in the child. (2) Determination of the origin of the

child's emotional problems. This includes an evaluation of the emotional atmosphere of the family and the personalities of the parents. (3) Formulation of a treatment plan. As mentioned previously, this frequently involves the correction of faulty attitudes on the part of the parents. Most parents do the best they can with the personalities they have. Most of the mistakes they make stem from unconscious problems of which they are not clearly aware and against which they defend themselves. The physician is prepared to deal with these problems and to help the parents to work out methods by which they may better handle the child.

SUMMARY

The general practitioner or pediatrician will find himself in a position of responsibility in the judicious evaluation and management of the emotional problems of his child patients. To an even greater extent than in the treatment of more purely organic illnesses, he will be called upon to exercise his knowledge of behavior and personality, his tact and personal influence, and his judgment of the possible wisdom of referral to other specialties or agencies.

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DRUG THERAPY IN BEHAVIOR DISORDERS

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Recent years have witnessed a phenomenal growth in the prescription of a variety of tranquilizer drugs in adult psychiatry. Actually, drug therapy was more popular and widespread in child psychiatry than in adult psychiatry even before the recent flurry of interest in the tranquilizers. This is probably related to the fact that hyperactivity is common in childhood disorders and also to reluctance to resort to methods utilized in the control of hyperactive, aggressive adults, such as lobotomy and electric shock. Thus, since 1937, Benzedrine[10] and subsequently Dexedrine[11] have been widely used in the treatment of emotional states in children. Specific therapeutic aspects of new drugs must be emphasized because for many years a variety of sedative agents, most recently the barbiturates, have been utilized in mental disease to achieve control through heavy sedation. With more recently developed drugs the aim is, if not to cure mental disorder, at least to ameliorate the symptoms and restore function and, in the child, to aid maturation and enable him to participate in educational programs. These goals cannot be achieved with heavy sedation.

In attempting to review the use of drugs in the behavior disorders of children, one is appalled at the number of drugs recommended and the conflicting claims both as to efficacy and absence of toxicity. It is difficult to evaluate individual studies and often impossible to make comparisons. Ages of children vary in different surveys, and diagnostic categories may be different. Often the studies are not properly controlled. There are several reasons for this omission. In preliminary work, particularly when the researcher is not at all certain what the dosage should be, it is impossible to conduct a double blind study. However,

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after the pilot investigation has been done there seems to be no excuse for omission of controls. There is an unfortunate reluctance on the part of some investigators to conduct the kind of studies which can yield definitive results. There are admittedly many difficulties in the usual controlled or double blind study. Unfortunately, the history of medicine is replete with enthusiastic claims made by responsible investigators that subsequently had to be withdrawn. Recent studies on the placebo effect indicate that a beneficial response is not only engendered by the patient's enthusiasm for the medication, but also is induced by the attitude of the physician.[5, 6, 33, 47] Pertinent here is the study at the Menninger Clinic which indicated that when a physician was enthusiastic, the medication was invariably successful; however, when the physician's attitude was negative, the result also was negative.[23]

CLASSIFICATION

In this presentation an attempt will be made to classify the drugs in groups. Experiences with individual drugs will be described from which some generalizations may be drawn concerning other members of the group. Finally, a working approach to the use of these drugs will be presented.

Drugs used for childhood behavior disorders are not confined to those with a quieting or tranquilizing action, though it is true that the need to prescribe drugs is often generated by the hyperactivity of the patient. In a number of instances, however, a stimulating drug would appear to be necessary. This is particularly true in the autistic child. Here the need is to increase alertness and to increase drive toward a relationship and development of language. Thus the drugs may be considered in two large groups—the tranquilizers and the stimulators.

TRANQUILIZERS

We shall first turn our attention to the tranquilizers. In this area, according to the classification suggested by Berger,[9] we can recognize four major groupings. Group I consists of compounds derived from phenothiazine and group II of rauwolfia derivatives. In the third group are compounds derived from diphenylmethane and in the fourth, compounds derived from propanediols. In Table 3 examples of members of various groups are indicated. This list is not complete, and though the chemical and the commercial names of each product are mentioned, many of these drugs have other designations in other countries. Also there have been few or no reports of experience with many of these drugs in children.

TABLE 3. *Classification and Dosage of Tranquilizing Drugs for Children*

CHEMICAL AND TRADE NAMES	DAILY DOSAGE IN CHILD 5–12*
Compounds derived from phenothiazine:	
Chlorpromazine (Thorazine)	30–150 mg.
Promazine (Sparine)	50–200 mg.
Mepazine (Pacatal)	25–150 mg.
Prochlorperazine (Compazine)	15–30 mg.
Perphenazine (Trilafon)	6–8 mg.
Triflupromazine (Vesprin)	20–100 mg.
Promethazine (Phenergan)	18.75–100 mg.
Reserpine and related alkaloids:	
Reserpine (Serpasil)	1–5 mg.
Compounds derived from diphenylmethane:	
Azacyclonol (Frenquel)	30–100 mg.
Hydroxyzine (Atarax)	30–150 mg.
Benactyzine (Suavetil)	†
Diphenylhydramine (Benadryl)	30–150 mg.
Captodiamine (Suvren)	100–250 mg.
Compounds derived from propanediols:	
Mephenesin (Tolserol)	1000–4500 mg.
Meprobamate (Equanil, Miltown)	600–1600 mg.

* Dosage may be altered for the younger child. The older child requires adult dosage. Dosage must be adjusted to the individual case. Often far larger doses than indicated can be utilized.

† No reports on children available at time of writing.

PHENOTHIAZINE DERIVATIVES

Thorazine

The best known representative of the phenothiazine derivatives is chlorpromazine, known in this country as Thorazine. One of the earliest reports was that of Heuyer et al.[36] Seven children with psychomotor excitation were given 2 mg. per kilogram. A calming effect lasted as long as the drug was administered in all the children. The drug was recommended for cases of chronic excitation.

Freed and Peifer[27] treated 25 hyperkinetic, emotionally disturbed children. Eighteen of these had primary behavior disorders, two were psychoneurotics, two ambulatory schizophrenics and three were considered to have reactive behavior disorders associated with organic brain disease. The dosage of Thorazine ranged from 10 to 250 mg. a day. Eighty-four per cent of the children were benefited, the improvement being marked in 72 per cent. The most prominent change was lessening of overactivity. In 20 per cent the faculty for learning was improved. The authors felt that though the basic character remained the same in these children, there was improved intellectual functioning and a trend toward greater self-acceptance. Likewise there was an urge for a closer

interpersonal relationship and a strengthening of emotional control. It is of interest that in five children enuresis decreased. In more recent work, Freed[26] has found Thorazine of particular value in the treatment of children with reading disability.

Ayd[1] found Thorazine useful in the treatment of schizophrenia in children, particularly in those with severe anxiety reaction. He recommended dosages of Thorazine up to 300 mg. a day. He reported unimpressive results and at times aggravation in the brain-injured child and in the obsessive-compulsive child. Gatski[31] administered Thorazine to a group of 46 emotionally maladjusted children. This was a mixed group of aggressive and anti-social children, including some with neurotic mechanisms. With a dose of 40 to 80 mg. a day, 39 of the 46 were moderately improved within a week; aggressiveness, destructiveness and hostile impulses were lessened. After administration of the drug, psychotherapy was possible. Gatski stated that hyperactivity associated with brain damage was often lessened in response to Thorazine. Similar results were reported by Flaherty,[24] using a much higher dosage of Thorazine.

There have been several reports on the use of Thorazine in hyperactive, mentally retarded children. In general, the authors found improvement in behavior.[40, 56] Most authors report no increase in intelligence quotient,[16, 21, 54, 58] and one a rise.[3]

Reese[53] reported positive results in six schizophrenic children ranging in age from four to 12 years. A dose of 30 to 75 mg. a day was given. Anxiety was relieved, and these children were more easily handled. The underlying psychopathology was not altered. Hunt[38] and his colleagues treated 58 severely disturbed children in a residential treatment center. The children were diagnosed as having schizophrenia, simple behavior disorders, or organic brain syndrome. Forty-four patients had some improvement, five were unchanged, and five became worse. In four patients the results were inconclusive. Hunt reported the best results with Thorazine in the behavior disorders. There the chief effect was a reduction of hyperactivity and aggressiveness. However, some of the depressed patients became even more depressed. Among the schizophrenics, those whose illness was acute responded best. Thorazine appeared to control the hyperactivity and to overcome the barrier of being isolated and withdrawn. It acted as an adjunct to psychotherapy by increasing awareness and social integration. Four of seven children with brain damage had some improvement in the areas of hyperactivity, aggressiveness and sociability. This was the least satisfactory group therapeutically. Miksztal,[46] treating children in a residential center, found that of 74 children, 65, or 81 per cent, were improved. At a dosage of 20 to 40 mg. a day, five of seven schizophrenic children were improved, five of six brain-damage children benefited, and three out of

three children with adjustment problems were improved, as were one of two mental defectives with psychotic reactions, and one of two with personality disorders. Thorazine was felt to be of value as an adjunct to the treatment of schizophrenic children.

Thorazine has been used in the treatment of the behavior disorders of children with cerebral palsy. Denhoff and Holden[18] have reported a study of the physical and behavioral effects on 18 such patients. An improvement was found in 50 per cent of the children, which was greater than the effect while receiving a placebo. Thorazine had no appreciable specific beneficial or deleterious effect on muscle status. The fact that the children were more relaxed and happier made possible an atmosphere in which the therapist and patient could work more actively toward rehabilitation. Bakwin[2] has reviewed the clinical use of Thorazine in pediatric psychiatry.

In a controlled study by Freedman et al.[29] Thorazine was used as one of a number of drugs (Table 4). The Thorazine was administered in

TABLE 4. *Percentage of Changes in Behavior from Drug Treatment*

DRUG	IMPROVED	UNCHANGED	ADVERSELY AFFECTED	NUMBER OF CASES
Schizophrenic Cases				
Benadryl	52	38	10	21
Serpasil	40	60	0	10
Thorazine	57	29	14	14
Tolserol	38	50	12	8
Placebo	38	38	23	13
Organic Cases				
Benadryl	46	54	0	13
Serpasil	38	50	12	8
Thorazine	50	25	25	8
Tolserol	100	0	0	5
Placebo	14	71	14	7
Primary Behavior Disorder Cases				
Benadryl	100	0	0	8
Serpasil	38	50	12	8
Thorazine	50	40	10	10
Tolserol	33	67	0	9
Placebo	40	50	10	10
Groups Combined				
Benadryl	58	36	6	42
Serpasil	40	54	6	26
Thorazine	53	31	16	32
Tolserol	50	45	5	22
Placebo	33	50	17	30

dosages of 30 to 100 mg. a day over a period of four weeks to 32 children, of whom 14 had schizophrenia, eight, organic behavior disorders, and 10, primary behavior disorders. Each child was evaluated according to changes in eight categories, comprising motor activity, manifest anxiety, relationship problems with other children, relationship problems with adults, affect, motility, phantasy life, and pathognomonic symptomatology. Fifty-seven per cent of the schizophrenic patients and half of the patients with organic and primary behavior disorders were improved while receiving this drug. Fifty-three per cent of the patients treated with Thorazine were benefited, as compared with 33 per cent of those given a placebo. Children receiving Thorazine indicated improvement in four categories: hyperactivity; manifest anxiety; relationship problems with peers; and relationship problems with adults. Upon statistical analysis of the changes in the four categories, as compared to those with placebo administration, a significant difference was found only in the category of hyperactivity (level of significance, $p = 0.01$, determined by the Chi square test). It was felt that the Thorazine was particularly useful in the treatment of hyperkinetic children, principally in those whose hyperkinesis was associated with schizophrenia. Hyperkinetic children in other diagnostic categories did not improve as impressively as schizophrenics.

CASE I. B.N. was a 9-year-old boy referred because of disruptive behavior in the classroom and subsequent suspension. He was hyperactive, made animal-like noises, was preoccupied with space and time, displayed many fears, particularly of death, dismemberment and destruction, severe anxiety, and was unable to establish relationships with peers or adults. There was a history of schizophrenia in the paternal grandparent. Development was normal except for a history of extreme anxiety, restlessness and remoteness from an early age. Psychological testing revealed an I.Q. of 125 and a test pattern consistent with childhood schizophrenia. The diagnosis was childhood schizophrenia. The boy was given Thorazine, 100 mg. daily, and psychotherapy was recommended. A satisfactory relationship could not be established, and the therapist recommended cessation after 5 months. However, there was an immediate response to Thorazine. The boy became less restless, behavior became controlled, outbursts and tantrums became rare. He seemed easier in his relationships, particularly with his parents, and bizarre behavior such as throat noises ceased. He was able to return to school and adjusted satisfactorily. He remained on Thorazine two and one-half years. On two occasions during the first year the drug was decreased and stopped. At both times restlessness and uncontrollable behavior returned. After two and one-half years Thorazine was slowly withdrawn with no outward effect. One year later he was still getting along well.

Sparine

Little experience has been reported on the use of Sparine in children. Personal experience would indicate that its effect is generally comparable to that of Thorazine; however, this drug must be used in equal or higher dosage than Thorazine for equivalent results. Thus, while in

a child of over three years of age, Thorazine generally can be used in a dosage of 30 to 120 mg. a day, Sparine would seem to require 50 to 200 mg. a day. Of course, in unusual situations, the dose of either drug may be increased considerably. Sparine was used in one instance when Thorazine had to be discontinued because of photosensitivity. This effect was not duplicated with Sparine.

CASE II. H.S. was a 7-year-old girl referred because of school phobia. She had become increasingly resistant to going to school in the morning, expressing fears and complaining of abdominal pain with vomiting. Frequent night terrors were also described. She was a severely anxious girl who generally preferred being alone. Developmental history was not abnormal. Mother had been in a tuberculosis sanitarium for 9 months when H was 4 years old. By psychological test, I.Q. was 115. The diagnosis was neurotic behavior disorder with schizoid traits. H was placed on a regimen of Benadryl, 80 mg. daily, and psychotherapy instituted. Benadryl did not produce an amelioration of her anxiety, and she was given Thorazine, 75 mg. daily. There was a prompt reduction of anxiety, loss of night terrors and improvement in working relationship with the therapist. After 4 weeks H returned to school and has remained there since through several crises. After several months a skin eruption took place in the sun. H was then given Sparine, 100 mg. daily. The clinical response was essentially as before, but the photosensitivity reaction was no longer observed.

Trilafon

There are few reports on the use of Trilafon in children. However, through the courtesy of Doctor Haine[35] of the Schering Corporation several research reports submitted to the company have been made available. In general, the experiences with Trilafon seemed to be similar to those reported for Thorazine. However, since Trilafon is a much more potent drug, the dosages are smaller. A dose of 6 to 8 mg. a day in divided doses would appear to be recommended. Larger doses apparently can be used when there is marked agitation. Several of the authors claim that less toxicity is evident with this drug than with Thorazine.

Compazine

There are no published reports of the efficacy of Compazine in children. Personal experience would indicate that with proper dosage Compazine is of value in behavior disturbances and in agitation and hyperactivity in schizophrenic children. In these children a dosage of 5 to 10 mg. three times a day is used. If higher dosages seem necessary, it would seem advisable to switch to Thorazine. The greater frequency of signs of extrapyramidal tract disorders when Compazine is given, with involvement of the face and shoulder girdle, cautions one against using this drug in higher dosages, although it seems to be effective at the lower dosage.

Vesprin

Freed[25] has studied Vesprin. Vesprin was adminstered to 12 emotionally disturbed children. The dose ranged from a total of 20 to 100 mg. daily for at least two months. In 11 of the 12 children some improvement in behavior was achieved, and in three of the 11 the improvement was significant. No important side effects were seen. Thus this drug would appear to be a useful addition to the phenothiazine group.

Phenergan

Phenergan is closely related to this group chemically. It has been widely used first as an antihistaminic, and subsequently as a drug to prepare patients for operation. I have found this drug useful in the treatment of the severely agitated child. It has a greater tendency to produce drowsiness as compared to Thorazine. However, it has the ability to reduce anxiety and extreme agitation in certain instances. I have found it valuable as an alternative to Thorazine in situations in which Thorazine or other members of the phenothiazine group have not succeeded and in which drowsiness may not be too objectionable, as, for example, in the child who seems to adjust satisfactorily to a day school situation, but, toward the end of the day, after returning home, becomes increasingly agitated and wild. In such instances Phenergan administered after the return home has a good tranquilizing effect and aids in producing a good night's sleep. Dosage varies from 37.5 to 100 mg. a day. Bender and Nichtern[8] reported similar results.

RESERPINE AND RELATED ALKALOIDS

Serpasil

Serpasil was one of the drugs that ushered in the modern era of tranquilizers. Reports of the use of this drug in children have varied from those expressing great enthusiasm to those describing limited success. One of the earliest reports was that of Talbot.[57] He reported on the use of Reserpine in 32 infants varying in age from six weeks to one year, presenting hyperactivity and irritability associated with bizarre sleeping patterns and mild growth failure. Serpasil was administered in doses of 0.1 to 0.3 mg. daily for six weeks or longer. Of the 32 patients, 29 were greatly improved with initial effects apparent in one to four days. In 19 cases complete remission of irritable behavior was noted. Seven other patients were improved, and in three there was moderate improvement. In all 21 infants with sleep problems a return to normality was evidenced on Reserpine. Eating habits were generally improved. Five in-

fants who had failed to establish an eating routine became more predictable, and eight with severe feeding problems were normal at the study's conclusion. Of the 29 successfully treated patients, 19 returned to their previous behavior at cessation of the medication after six weeks. A placebo failed to have any effect. However, with the resumption of Serpasil, the infants once again ate and slept better and lost their irritability and tension.

There have been several reports on the use of Serpasil in mentally retarded children.[50, 56] A typical study is that of Timberlake.[59] In this study 188 mentally retarded patients were studied by a double blind technique. The dosage was 1 mg. a day. Forty per cent of overactive, abusive, destructive, impulsive or withdrawn patients were improved during the two months on this medication. Increased dosage did not markedly alter the results.

There are several studies in which Serpasil was used as an adjunct in the therapy of epilepsy to treat the personality difficulties following the control of convulsions. Lambros[41] treated 116 children with Serpasil. The dosage varied from 0.25 to 1.5 mg. per day. The author stated that tranquility was noticeable and corroborated by the family, friends and co-workers. Lambros also stated that Serpasil given to 16 enuretic children, many of whom had associated hyperkinesis, resulted in 15 children stopping wetting the bed in three days on a dosage which averaged 0.75 mg. of Serpasil a day. No other treatment was given to these children. This relief continued as long as eight months. The one patient who did not improve was subsequently examined by x-ray and found to have a duplication of one ureter. When 10 of the 16 discontinued the drug, bed-wetting recurred. Interestingly enough, when the 10 were again put on a regimen of Serpasil, only in one was complete control regained, and partial control in three. The remaining six were not helped.

Zimmerman and Burgemeister[63] reported the use of Serpasil in 72 children suffering from epileptic attacks of the petit mal, grand mal or psychomotor varieties. They stated that the children had fewer attacks when Serpasil was combined with previous anticonvulsive medication. Schwade[55] treated children with severe behavior disorders of the impulsive type who had consistent abnormal brain wave tracings. Serpasil was administered in doses of 0.25 mg. three or four times daily. The author stated that Serpasil lessened excessive activity without irritability. It also made psychotherapy possible. Lehman[43] and his colleagues treated nine autistic children with Reserpine and placebo. The dosage ranged from 0.6 mg. a day until a total daily dosage of 9 to 12 mg. a day was reached. All the children showed some improvement manifested by reduced activity, easier management and greater awareness

of surroundings. In contrast to other studies, four children developed nocturnal or diurnal enuresis and dribbling of the urine with high dosages of Serpasil. A withdrawal syndrome appeared on sudden cessation of medication, and a return to the drug was necessary.

Nicolaou and Kline[49] used Reserpine in the treatment of disturbed adolescents. They stated that psychological defenses were qualitatively altered, the Reserpine setting the stage for corrective emotional experience. These authors felt that it was most useful in cases in which aggressive acting-out characterized the social behavior of the children. Bender and Nichtern[8] recorded variable success with Reserpine. They felt the result was often unpredictable. They stated that the impulsive, aggressive child with manifest anxiety is helped if the Reserpine does not increase autonomic lability.

My experience with Serpasil has likewise been variable.[20] In the controlled study on an in-patient population described previously, Serpasil was administered in daily dosages of 0.3 to 3.0 mg. a day (Table 3). Each patient was evaluated in the eight categories described above. Twenty-six children were treated with the drug. Changes were certainly observed with the use of Serpasil. Forty per cent of the schizophrenic patients, 38 per cent of those with organic behavior disorders and 38 per cent of those with primary behavior disorders improved. The most outstanding effect of Reserpine was in the control of manifest anxiety. However, when these results were critically evaluated and compared with the results using a placebo, one could not state that the drug produced an effect outstandingly different from that of a placebo. It may well be that better results would have been achieved using the higher dosage range reported in other studies, although the range reported is similar to that used in many of the studies claiming success.

DIPHENYLMETHANE DERIVATIVES

Frenquel

The third group of drugs to be discussed are the compounds derived from diphenylmethane. There are relatively few reports on the use of Frenquel in children. Bender and Nichtern[8] were favorably impressed by this drug. Frenquel was felt to decrease impulsivity and integrate total functioning and also to reduce diffuse anxiety with both schizophrenic and organic children. My own experience with Frenquel has been variable. Eighteen children have been treated with Frenquel, 30 to 100 mg. daily. In 10 children diagnosed as having primary behavior disorders and mild organic states, four were improved with Frenquel. Those with more severe organic disturbances and the schizophrenics were not helped by this drug.

Atarax

Atarax has generally been reported as a useful drug with few unfavorable effects. Bayart[4] reported the treatment of 187 ambulatory children between the ages of one and 12. He was impressed by the lack of sedative effect and the diminution of nervous and psychic tension, with resultant quiet and mental peace. A group of 70 children with tics, varying in age from five to 12 years, were treated with Atarax. On a dosage of 30 mg. a day, the tics disappeared in 90 per cent after 12 days of treatment. After three months the medication was stopped; in 78 per cent the tics did not reappear. In the 22 per cent in whom the tics recurred, the dose was doubled, that is, to 60 mg. daily for 15 days. Sixty per cent of the patients with relapses responded to treatment. A second series of 56 children varying in age from seven to 12 years, described as emotionally unbalanced, nervous and having school difficulties, were improved with Atarax.

Heuyer[36] and his colleagues found Atarax of little benefit in severely disturbed children such as schizophrenic, delirious, and so on. However, in 10 cases in which the complaints were neurotic, seven showed improvement, one became worse, and one was partially improved.

Ayd[1] found Atarax of definite value in neurotic children and hyperkinetic brain-injured children. He stated the drug lessened tension, relieved symptoms of disturbed autonomic functioning and calmed hyperkinetic behavior. A dose of 75 to 100 mg. daily was recommended, although hyperkinetic children may require 200 to 300 mg. daily. He also recommended Atarax to reduce anxiety in children who became distressed when faced with unpleasant, fear-provoking situations, such as diagnostic tests, admission to hospitals, dental work, and the like. He found the results in ambulatory schizophrenic children not as good as with Thorazine or Serpasil.

Nathan and Andelman[48] used Atarax in the management of behavior problems in private pediatric practice, while Farah[22] treated 96 miscellaneous psychosomatic patients. All reported generally favorable results.

I have administered Atarax to a series of 39 children. Of these, 10 were schizophrenic, eight had organic behavior disorders and 21 had behavior disorders. The best results were obtained in the last category. Fifteen showed definite improvement. The change in 11 was noteworthy. The complaints of the children were anxiety states, night terrors, reactions to somatic difficulties and school phobia. The Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior and psychotherapy. Of the 10 schizophrenic children, four who displayed moderate hyperkinesis and anxiety appeared to benefit from Atarax with a reduction in activity and anxiety. However, those

patients with more severe anxiety or anxiety defenses, hyperactivity, or well established phobias did not respond. One child with severe hyperactivity actually appeared to be made worse. Similarly, three of the eight children with organic behavior disorder, who displayed mild hyperactivity, restlessness and distractibility, responded well to Atarax. However, in the dose range used, the more severely ill patients did not appear to respond. Thus Atarax appears to be beneficial in the milder form of behavioral difficulties, but is less effective in the more severe forms. The dosage varied from 30 to 150 mg. a day. In some instances, when the primary complaint was night terrors, the drug was administered in the evening and before bed rather than throughout the day in divided doses.

CASE III. M.L. was a 3-year-old boy whose parents stated he had had severe night terrors 3 to 4 times a week for the previous 2 months. There had been considerable tension in the household between the parents over a number of conflicts and the presence of the child's maternal grandmother, who was widowed. Development and previous adjustment had not been unusual. Atarax, 10 mg. at 5 p.m. and 20 mg. at 7 p.m., produced prompt cessation of night terrors. The parents were counselled concerning their problems. After 4 weeks the Atarax was gradually stopped with no return of night terrors for a follow-up period of 8 months.

Benadryl

The drug with which I had experience prior to the introduction of the tranquilizing drugs is Benadryl.[20] In one controlled study[29] (Table 3) 42 children were treated with Benadryl in doses of 30 to 160 mg. a day. Of these children, 25, or 58 per cent, improved in contrast to 33 per cent (10 out of 30) who were administered a placebo. The results of Benadryl versus placebo were significant at the 0.05 level using the Chi square test. The data are broken down according to diagnostic categories as indicated in Table 3. As can be seen, the children with the diagnosis of primary behavior disorder yield the best results. However, the series was too small to yield statistical significance. When the results of Benadryl versus placebo were analyzed in the categories of manifest anxiety, relationship problems with adults and depressed affect, the differences were significant at the 0.01 level according to the Chi square test. We thus concluded that Benadryl was a useful drug and was particularly helpful in those children with primary behavior disorders displaying anxiety. Considerable experience with this drug since that time has confirmed this early impression. Bender and Nichtern[8] felt that Benadryl was most successful in the relief of impulsive behavior which the child himself finds difficult to control. The authors felt that Benadryl seems to dampen these disturbing internal stimuli. Therefore they used it to control head banging, body rocking,

tics and other repetitive motor activities. Aggressive, destructive behavior originating in the same mechanism was favorably modified.

CASE IV. D.C. was a 5-year-old boy with infantile speech. He presented the picture of a mild impairment of brain function, or organicity. He was anxious and restless, had a shortened attention span, and was distractible and impulsive. There were no neurologic findings, but his gross motor activities were awkward. His parents had great difficulty getting him to bed and to sleep. There was a history of prematurity. A diagnosis of mild brain injury was made. The child was referred for speech therapy and placed on Benadryl, 60 mg. daily. His parents were counselled. He became less anxious and restless, slept better and was less impulsive. He was more manageable at home, and relations with his parents improved.

Suvren

Another member of this group which is closely related to Benadryl is Suvren. Lowe and Myers[45] reported the use of Suvren in brain-injured children. They treated 40 children who had been diagnosed as brain-injured according to the criteria of Strauss. Dosage varied from 50 mg. twice a day to a total dosage of 250 mg. a day. Improvement was evident within two to five days on adequate dosage. Twenty-three of the 40 children had a positive response. Seven had been tried unsuccessfully on one to five other tranquilizers before Suvren was started. The drug was also given simultaneously with anticonvulsant medication to epileptic patients. It was felt the useful response was not due to sedation and drowsiness, but rather to the reduction in overactivity per se, without affecting the mental alertness of the patients.

PROPANEDIOL DERIVATIVES

Tolserol

The appearance of meprobamate on the market was greeted with considerable interest because previous experience with children had shown that the parent drug, Tolserol[29, 30] (Table 3), produced improvement in children with a diagnosis of organic brain disorder. Although this was a small group of children in the over-all drug study mentioned, all of five children treated with Tolserol showed improvement. Further clinical work with Tolserol confirmed this earlier trend. However, Tolserol was difficult to administer.

Meprobamate (Miltown, Equanil)

Perlstein[52] reported the use of meprobamate, which is related to Tolserol, in convulsive and related disorders. He felt that meprobamate was of greater benefit in the control of petit mal, but less effective

than Tridione. In 29 patients presenting serious behavior problems, including seven psychotics, only seven showed benefit that could be attributed to meprobamate in comparison with a placebo.

Litchefield[44] evaluated meprobamate in disturbed and prepsychotic children seen in pediatric practice who manifested restlessness, irritability and sleeplessness. Twenty-eight cases were treated and followed up for 36 months. Positive results were reported using a dose ranging from 50 mg. daily in the very young to 800 mg. daily in older children. Livingston[44a] administered meprobamate in a dosage of 400 to 2400 mg. daily to 76 epileptic children with behavior disorders. Forty-two per cent of this group responded favorably. The author felt the meprobamate to be superior to Thorazine and Serpasil.

I found meprobamate to be of greatest use in children with organic behavior disorders. Some of these children had convulsive histories and were receiving anticonvulsive medication. Others presented the clinical picture of hyperactivity, restlessness, distractibility and short attention span. A dosage was begun of 600 mg. a day generally for a child over five years old and increased to 1600 mg. Such children seemed to achieve better control of their impulses. They were less aggressive and distractible, were more amenable to discipline, and were able to accede to environmental demands.

Case V. A.M. was a 6-year-old girl who was receiving Dilantin for grand mal seizures. The mother complained of her extreme restlessness, destructiveness at home, impulsiveness and aggressiveness to her baby sister. Mother described her as being "nasty." Examination revealed a markedly hyperkinetic, impulsive child with great anxiety and motor drivenness. Frenquel, 80 mg. daily, produced no change. Miltown, 800 mg. daily, produced slowing down of activity, better control at home and at school. Teacher praised her for her change. Mother described her as being sweet. On one occasion the drug was slowly withdrawn, and mother again described her as being "nasty." Her condition improved with restoration of the drug.

STIMULANTS

BENZEDRINE AND DEXEDRINE

Although Benzedrine and Dexedrine are discussed among the stimulants and generally thought of as such, in child psychiatry they are more often used to quiet children than to stimulate them. However, both effects are described. Since 1937 Bradley has written a series of papers[10, 11, 12, 13] describing the use of Benzedrine and Dexedrine in the treatment of children's behavior disorders. Recently he reviewed 12 years' experience involving the treatment of 388 children with Benzedrine and Dexedrine. Benzedrine was administered in daily dosages of 10 to 40 mg. with 20 mg. a day as the optimum dose. Similarly, Dexedrine was administered in doses from 5 to 30 mg. a day with 10 mg. a day as the optimum dose. These children had a wide variety

of diagnoses, including psychogenic problems, convulsive disorders, psychopathic personality and schizoid personality. Of 275 children who received Benzedrine sulfate, 73.1 per cent were improved, while 61.1 per cent of 113 children receiving Dexedrine were described as improved. The author concluded that Benzedrine and Dexedrine were valuable in the treatment of all behavior disorders in children. In those children whose maladjustment was expressed through restlessness, noisiness, hyperactivity and distractibility, Benzedrine and Dexedrine were reported as having a subduing effect. On the other hand, in fewer children whose symptoms had been those of underactivity and withdrawal from social contacts, the drugs appeared to stimulate to a more active and successful participation in conventional childhood activities. In general, the results with Benzedrine were superior to those with Dexedrine.

Similar results have been reported by other authors. Thus Bender and Cottington[7] reported an over-all improvement of 58 per cent with the use of Benzedrine. They stated that the best results were in the psychoneurotic and neurotic behavior disorders and particularly in the areas of behavior and relationships. There was no impressive improvement in those children diagnosed as psychopathic, schizophrenic or organic. On the other hand, Ginn and Hohman[32] found Dexedrine particularly valuable in children who displayed excessive restlessness, short attention span, impulsiveness and moderately severe emotional variability—in short, the picture of an organic child. Similarly, Laufer and Denhoff[42] found Dexedrine valuable in the treatment of children with organic behavior disorders diagnosed according to the criteria of Strauss. In this study the organics had a low threshhold, using the photometrazol test. With treatment with the amphetamines the threshhold increased up to normal levels.

In my own experience I have not been able to duplicate the high percentage of improvement reported in other series. I have found that less than half show a favorable response. These are particularly those children who tend to be shy, withdrawn, with a good deal of manifest anxiety. Many of these children have been relatively paralyzed and unable to act. The results with schizophrenic children have been uniformly disappointing. In those who were withdrawn the Benzedrine has either failed to produce any reaction or has made them wildly excited. Likewise, I have found the results with organic behavior disorders somewhat inconsistent. At times there is a dramatic response immediately. On the other hand, often there is a slower response or no response at all. Pasamanick[51] reported a controlled study of a small series of children using a number of drugs. Four out of 10 children had marked or unequivocally beneficial results with amphetamines. This was the best result of any of the drugs tried on this group of children

who had primary behavior disorders with abnormal electroencephalograms.

MARSILID

Iproniazid, or Marsilid, has recently been reported of value in the treatment of autistic children. A preliminary report[28] describing 14 children, all of whom had been diagnosed as autistic, stated that seven were definitely improved, three slightly, and four were unchanged. Marsilid was administered generally in a dosage of 0.5 to 1 mg. per pound over a six months' period. When a favorable result was achieved, the children displayed increased alertness and awareness of their surroundings. Also, a drive for language was displayed in some of the children who possessed little or no language. Although the early results were promising, further work is necessary before the role of Marsilid in child psychiatry can be completely delineated.

CASE VI. F.H. was a 6-year-old boy with a typical history of early infantile autism. He was described as exceedingly remote from birth. He seemed unusually anxious, and his sleeping pattern was very disturbed. He showed distinct compulsive trends and marked phobias after his first birthday. He lived in a world of his own, spending hours gently rocking, oblivious of people and objects. At two and one-half he was stated to have said a few words, but since then he had neither talked nor babbled. Prior to drug therapy he was exceedingly lethargic and unrelated. He was placed on 25 mg. of Marsilid daily (0.5 mg. per pound), which was then raised to 50 mg. daily (1.0 mg. per pound). His level of activity increased, and he appeared more aware of his surroundings. He would touch objects and fondle his mother. He began babbling and made attempts to form words. After five months he began to become exceedingly agitated at night and would not sleep. Thorazine and Phenergan were administered in the evening, but did not control him. Marsilid was stopped. He began to sleep again at night, but slowly, over a six weeks' period, activity, alertness and babbling decreased. He was started again on 25 mg. of Marsilid daily for another course of treatment. There was a return of activity and alertness.

HYDANTOIN COMPOUNDS

A number of studies have been carried on to investigate the effectiveness of the hydantoin compounds in children with behavior disorders who are known to have abnormal electroencephalograms. Thus Walker and Kirkpatrick[61] studied 10 children with behavior problems and abnormal electroencephalograms. When treated with Dilantin sodium, all these children showed improvement. Similarly, Brown and Solomon,[14] who used Dilantin, reported improvement in three of seven delinquent children with serious behavior problems and abnormal electroencephalograms characteristic of psychosomotor epilepsy. In the study of Pasamanick,[51] 21 children presenting primary behavior disorders with abnormal electroencephalograms received several drugs. The effects of anticonvulsive medication such as Dilantin sodium, Mesan-

toin and Tridione were uniformly disappointing. My own clinical experience is similar to the latter findings.

TOXICITY

All the drugs described here are very potent, with consequent potentiality for toxicity. For many of the drugs experience is relatively brief and dosage low. Thus it is advisable for the physician to be constantly on the alert for signs of toxicity. This would appear to be indicated even in those drugs from which toxic effects have not been described. Thus, in a large series of adults treated with one of the most popular drugs, Thorazine, an incidence of 0.11 per cent of leukopenia with a white blood cell count less than 2000 cells per cubic millimeter was reported. One death due to agranulocytosis was reported by these authors.[15] In another series 1.2 per cent of the cases were found to have jaundice.[17] In a study of young adults Dickes[19] and his associates tested 50 patients receiving Thorazine, by means of liver function tests. Twenty-one revealed some abnormality. Similar studies have not yet been reported on children. Aside from leukopenia and jaundice, the following symptoms have been reported for various members of the phenothiazine group: swallowing difficulties, Parkinson's syndrome, urinary retention, sinus tachycardia, dermatological effects, somnolence, hypotension and convulsions. The fact that compounds of the phenothiazine group tend to produce convulsions indicates caution in their use with children who are having convulsions or electroencephalograms consistent with convulsions. It has been mentioned above that there are some reports of the favorable effect of Thorazine in such children.

With the Reserpine group, leukopenia, convulsions, Parkinsonism, depression and hypotension are among the more important toxic manifestations.[34] Similar precautions are necessary in their use.

Among the compounds derived from diphenylmethane few severe toxic manifestations have been reported. Benactyzine would appear to be an exception to this rule, since disturbing side effects have been reported with this compound.[39] The remarkable absence of toxic symptoms has been emphasized with Atarax. Thus far, this would appear to be true. However, caution is required until longer experience confirms the earlier impression. There has been vast experience with Benadryl in its use as an antihistaminic. Here drowsiness and occasionally leukopenia have been reported.

In the group of compounds derived from propanediols, particularly meprobamate, a number of toxic signs have been recorded. Among these are purpura, diarrhea, diplopia, dermatitis, hypotension and, on occasion, as a withdrawal symptom, convulsions.[60] It is probably wise

with meprobamate and all the other drugs at the time of cessation of use to withdraw gradually rather than abruptly.

Among the stimulants the greatest difficulty in the use of the amphetamines appears to be overexcitement, which can best be handled by withdrawing the drug. Liver dysfunction or injury and agranulocytosis are causes of concern in the use of iproniazid. In children one of the difficulties in the use of the drug is excessive activity and sleeplessness. These sometimes can be combated by judicious sedation during the day or at night as indicated. The toxic manifestations of the use of Dilantin are well known, including gum changes, skin changes and neurological manifestations.

A WORKING APPROACH

A survey of this sort may leave one rather perplexed as to which drug to use and on what occasion. A working approach for the use of these drugs has been established. Certain principles must be kept in mind.

1. Both the diagnosis and the intensity of symptoms are important in deciding which drug to use.

2. Etiology and diagnosis in psychiatry are not precise. Consequently, exact prescription of drugs is not possible. There is need for experimentation and individual variation.

3. High dosage is often necessary in administering this group of drugs to children. Often one approaches the adult dosage.

4. One must always take adequate precautions and be alert for signs of toxicity.

5. Whenever possible, a liquid preparation should be used rather than pills or capsules. This is particularly true when treating the younger child.

6. Drug treatment is only part of the total treatment of the child. The other aspects should not be neglected, though they are not emphasized in this paper. One must investigate the interpersonal problems of the child, the family relationships and the school problems.

With these principles in mind the following procedures are recommended:

1. If the symptoms are relatively mild and the diagnosis falls in one of the following categories, it is well to start out with one of the drugs in the diphenylmethane group such as Atarax or Benadryl in the doses recommended: neurotic behavior disorder; primary behavior disorder; disturbing habit patterns, such as tics; sleeping problems; night terrors; adjustment problems; school phobias; reaction to hospitalization; fear of hospitalization or medical procedures; schizophrenia in mild form; and moderate or mild organic states.

2. In a moderate or severe organic state or in a mild organic state that has not responded to Atarax or Benadryl, meprobamate is recommended. In some situations in which an organic component may be involved, such as tics, meprobamate also has been found useful, where the first two have failed. Benzedrine should also be considered in this category.

3. In the severe neurotic states or in the milder neurotic states mentioned in *1* above which fail to respond to Atarax or Benadryl, in mild schizophrenics who also do not respond to Atarax or Benadryl and in the more severe and active schizophrenics, one of the members of the phenothiazine group is recommended. In case of failure, Reserpine may be tried.

With such an approach pharmacological compounds will be found to be valuable in the treatment of behavior disorders in children.

SUMMARY

1. Recent advances have made available a large number of drugs for the treatment of behavior disorders in children.

2. These drugs can be classified as tranquilizing or stimulating drugs. The tranquilizing drugs can be further classified into the phenothiazine group, Reserpine group, diphenylmethane group and the propanediol group.

3. Special advantages and disadvantages are present with each of the groups in accordance with the diagnosis and the severity of symptoms.

4. Precautions against toxicity must always be taken.

5. Drug therapy is a valuable part of the total treatment of the child.

6. A working approach to the treatment with drugs of a child with a behavior disorder is outlined.

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EATING PROBLEMS

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The pediatrician of this generation, interested in the health supervision of the growing child, finds himself confronted with an inordinate number of eating problems in his daily practice. The existence of such a multitude of children in the United States who seem to eat such small amounts of the foods abundantly available is ironical, indeed. This paper will review the etiology of eating problems and will suggest a program of prophylaxis and treatment.

DEFINITION AND TYPES

There is no simple definition of an eating problem. A mother, distressed by her baby who mischievously sprays spinach at her, may feel that her child presents a feeding problem, whereas, at the other extreme, an adolescent girl suffering from anorexia nervosa actually does represent an eating difficulty of the utmost gravity. Between these poles are the large numbers of children who, in the judgment of those responsible for their care, eat foods insufficient in quantity or inferior in quality for the maintenance of good health. In addition, there must be included those children who do eat, but not at the appointed mealtime, or whose manners or behavior at the table is so bad that the pediatrician is consulted for advice.

A feeding problem is a symptomatic disturbance rather than a disease entity. Ridenour[28] stated that, although it may seem fatuous to suggest that a search be made for the causes of a problem before treatment is instituted, such a warning is appropriately given. A physician whose study of the origin of a persistent cough is a model of differential diagnosis may, surprisingly enough, give advice about enuresis, thumbsucking or feeding difficulties in an offhand manner quite inconsistent with his exhaustive investigation of the respiratory problem. On the other hand, it is equally important that a psychiatrically oriented physician not overlook the physical elements of a problem because of his interest in psychogenic causes.

Although the scope of this paper does not include a review of eating difficulties caused by physical illness, a few comments are pertinent. As a rule, parents as well as physicians are aware of the sudden anorexia associated with an acute illness. With the subsidence of fever and toxicity the appetite usually returns quickly. Undue concern, however, over the nutritional status of the child during the acute phase of the illness may delay the return of normal eating habits because the patient enjoys the secondary gains of a situation wherein he is the center of attention.

Less obvious than the acute problems are those in which the appetite has been impaired by a chronic illness. In this group, for example, are patients suffering from rheumatic fever, chronic nephritis, sinusitis, anemia or worm infestations. If the history or examination of an anorexic child suggests the possibility of a previously unrecognized chronic illness, all available diagnostic tools must be used to establish or rule out the disease.

Removal of the tonsils and adenoids to cure a feeding problem deserves comment. Difficulty in the accurate evaluation of disease in these tissues is notorious. It is true that the excision of tonsils and adenoids which are unequivocally diseased will improve the child's health and his appetite. The study of Johnston and Maroney[19] showed increased nitrogen retention and improved nutritional status after scarred, chronically infected tonsils were removed. However, the coincident association of hypertrophied tonsils with the complaint of anorexia does not prove a cause-and-effect relationship. Kaiser[21] found that less than half of a group of anorexic children showed improvement after tonsillectomy. An unnecessary operation on a child with a behavior problem will aggravate symptoms and complicate treatment.

Children who present eating difficulties may be classified, for purpose of discussion, into two groups. The larger group includes the children whose problem is related primarily to the management of the feeding itself. The smaller group includes those patients who are emotionally disturbed and show tension and anxiety from which the eating problems arise. Such a classification may be helpful because most of the patients in the first group can be treated by the pediatrician alone, whereas the second group may require assistance from teachers, school counsellors, social workers, community agencies, psychologists or psychiatrists.

ETIOLOGY

Problems in Infancy Directly Related to the Management of Feeding

In the first year of life, and particularly in the first six months, the most important relationship of the baby to his environment develops

through his feeding experience. The personality evolves as the reflex behavior of the newborn is conditioned by gratifying feedings attuned to his needs; associated with these feedings is the baby's first relationship with a person. Spock and Huschka[34] have observed that "when feeding has gone well it gives a basis for other life functions to do likewise."

A study of the causes of disturbed feeding behavior of infants must include an evaluation of current social, cultural and economic patterns. With certain exceptions, breast feeding in urban America is no longer fashionable. *Artificial feeding*, although in my opinion quite compatible with satisfactory development, presents many sources of potential mismanagement. The formula may be too hot or too cold, too concentrated or too dilute, too rich in carbohydrate or not rich enough; milk may flow too freely or not freely enough; the formula may be contaminated, or spoil with improper refrigeration; bottle holders may be substituted too easily for the mother's arms; an empty bottle may mean an end to sucking pleasure, though sucking needs may be strong and still unsatisfied.

The fundamental need of the young infant for a continuing relationship with a loving mother or mother-figure for his optimal development is supported by conclusive data.[6] In our society, however, the care of the infant is not infrequently turned over to a succession of maids or sitters while the mother is busy outside the home. Economic pressures may force the mother to return to work. Sometimes she is impelled to resume a career because she feels that society depreciates the role of housewife, or she may engage in time-consuming philanthropic or social activities. The high salaries now paid to women in industry make it difficult for a mother to hire a competent substitute. In this situation the baby cannot thrive emotionally, and feeding problems are likely to develop.

In many ways our culture has produced an unwholesome competitiveness with emphasis on false values. Prestige value is found in elaborate homes, larger cars and, unfortunately, in bigger babies. The desire that a baby be bigger than nature intended can cause only difficulties with the feeding. Furthermore, some parents believe that a fat baby is a healthy baby. If this misconception is aggravated by a pseudoscientific knowledge of nutritional requirements, the baby may be forced to eat. Vomiting or anorexia is the natural consequence of such management. Anxiety may also arise from misinterpretation of the widely distributed height-weight charts if the infant fails to attain the theoretical averages.

Ignorance of the patterns of *normal development* accounts for many of the problems of the first years. At four to six months of age the infant begins to chew, an activity often interpreted as a sign of teeth-

ing. At this time the mother may tentatively offer foods somewhat coarser in texture. If the infant's readiness to take such foods is not recognized, he may later refuse to try them at all. After the first year the baby's demand for pureed food exclusively may be due to the mother's anxiety about aspiration.

Two decades ago Aldrich[2] urged that parents and physicians recognize the individuality of babies. A mother may inadvertently precipitate difficulty by her failure to make changes suggested by her child's behavior. One baby may be quite ready to give up his 10 o'clock bottle at four months, but his neighbor may need this feeding for some time to come. A lagging appetite may be stimulated by the pleasure the baby gets from finger feeding as he approaches a year of age, and this forward step should be encouraged despite the added work it means for the mother. Some babies, however, are not ready to help themselves until well into the second year.

Food idiosyncracies are both inherent and acquired. In my experience infants, unconditioned by previous experience, often show distinct food preferences and aversions. Davis[8] describes three types of eaters: those who eat every food eagerly; those whose acceptance of variety is limited, but who eat more foods as they get older; and a small number who take a strictly limited selection, but, in later life, tend to eat other foods to conform socially. In addition to these inherent preferences, conditioning to food begins even in early infancy. Escalona[12] has observed that an infant, sensing his mother's aversion to a specific food, will reject it when offered by her, but will accept it when it is fed by someone else. The mother who is determined that her child not have any food idiosyncracies, and insists that every food be eaten, may be responsible for a subsequent negative attitude toward all foods. A good appetite can develop only when mealtime associations are consistently pleasant.

Eating problems associated with the taking of *milk* are frequent. Until recent years many laymen believed that the nutritional status of a child who did not drink a quart of milk a day would suffer. An attempt to adhere rigidly to this standard may result in rebellion which can influence the child's total attitude toward eating. In practice, severe nutritional anemia resulting from drinking large quantities of milk to the exclusion of other foods is encountered more often than calcium deficiency resulting from inadequate milk intake.

The association of ill-advised *weaning* with feeding difficulties is a common one. The relation of gratifying sucking experience to the emotional well-being of the child is widely recognized.[11, 20, 24] I have observed children, previously enthusiastic milk drinkers, who, when abruptly deprived of the bottle, never again tasted a drop of milk.[29] This sudden weaning not only deprives the child of needed calcium, but also represents a profound insult to his psyche. Not infrequently

this trauma is followed by regressive behavior, increased finger sucking, sleep disturbances or other signs of emotional tension. Sometimes the weaning is unreasonably deferred by parents whose anxiety about possible psychic damage impairs their judgment and self-confidence. In lower socio-economic groups weaning may not occur until three or four years of age.

The sharply rising *growth* curve characteristic of the first year of life decelerates rapidly thereafter. The infant, needing fewer calories for growth after his first year, shows a relative decrease in appetite, and the inexperienced parent is dismayed by this lack of enthusiasm for eating. At this stage of development the toddler is more interested in locomotion and environmental exploration than in food. He may eat one good meal a day instead of three, or he may go on a dietary spree at times limited to a small number of favorite foods. He is aware of his flowering ego and delights in asserting himself so that he may even tend to refuse foods he really enjoys if, by so doing, he can hold the center of the stage.

The attitudes of an emotionally *insecure* or *neurotic mother* may play a determining role in the development of feeding difficulties. The gravity of the child's problem is likely to be in direct proportion to the depth of the mother's disturbance. The child's difficulties may be superficial, or his symptoms may be manifestations of a serious psychiatric illness. The less disturbed mother may cause trouble by her compulsive attention to scheduling, amounts of food, and their nutritional adequacy. On the other hand, informed about the latest ideas on demand feeding, another mother may so completely misinterpret her instructions that she is never able to guide her infant to a way of life compatible with the needs of the rest of the family. One mother gives her pediatrician insight into her personality make-up by asking, when it is suggested that she offer her baby a few teaspoonfuls of cereal, whether the suggested amount refers to cereal in the dry state or after it is mixed with the milk. We see parents, barely 5 feet tall themselves, worried about the slow growth of their small baby whose development may be entirely normal for his heredity. One woman whose life situation is intolerable may be quite unable to give her child the warm mothering it needs for its emotional development; another unhappy mother may overwhelm the infant with a degree of love and devotion more appropriately reserved for a mature relationship with her husband. The disturbed feeding behavior of the baby may be the first response to the unhealthy emotional climate of his life.

Problems in Childhood Directly Related to the Management of Feeding

Feeding difficulties after two years of age have roots in the same soil from which the problems of infancy grew. From the ages of two to

seven, however, a multitude of new influences can reinforce the stresses of the first years and aggravate the existing disorder.

Although the *father's influence* on the behavior of the small baby is not usually stressed in pediatric writings, his importance should not be minimized. In the first years of the baby's life the father's attitudes are commonly mediated through the relationship with his wife; however, as the child grows older, it is usual for the father to deal more directly with him, so that his concepts about an adequate diet and a proper feeding regimen also need evaluation when difficulties arise. In my experience both parents often recall vividly the attitudes of their own parents about food, but it not uncommonly happens that, although they deeply resented the forcing or the punishment or the scoldings of their own childhood, they are likely to follow identical patterns in dealing with their children.

Demands that preschool children come to the table sparkling clean and that they then eat with good manners, empty their plates and sit quietly throughout the meal make for a host of tensions which may destroy the desire to eat. Fries[14] writes that "we accept without question the fact that behavior which is normal for the infant is not appropriate for the adult . . . Yet this principle in reverse, equally valid, is frequently ignored, for many parents and doctors tend to curtail the period of infancy and expect adult-like performance from the young child." It is, of course, to be desired that children acquire good table manners, but this is a slow process. In some homes the battle over hand-washing preceding each meal destroys the appetites not only of the children, but of the adults as well.

Mention has been made previously of intrinsic *food preferences* in infancy. In the preschool years the child may become even more selective because his eating is now also influenced by food color and niceties of service, and he tends to reject foods too highly seasoned or served with "gooey" dressings or rich sauces. He is also keenly observant and will push away foods that his parents or older siblings do not like even though they may pretend to eat them. His overestimation of desserts, candy and ice cream is in part conditioned by the widespread use of these foods as rewards for good behavior and their withholding as punishment.

Eating difficulties may arise if the atmosphere at the table is charged with *tension*. When the mother depends on her husband for the discipline of the children's misdeeds, these are likely to be reviewed during the evening meal so that the child becomes more concerned with the impending punishment than with eating. It is at this time, too, that there may be prolonged discussion of neglected chores and low grades at school. On the other hand, when the young child is completely ignored unless he misbehaves or refuses to eat, he may persist in these

activities primarily to get attention. If meals are late in starting or interminably long, children become irritable and restless. Furthermore, if the child is overexcited or overtired, he is unlikely to eat well.

The appetite of the child who nibbles food all day will be understandably poor at mealtime. If the child is not a good eater, the mother, anxious to see the intake of some calories regardless of quality, will sometimes permit the day-long ingestion of bread and jelly, cookies, raisins, potato chips, candy and ice cream. A vicious cycle develops from which no satisfactory eating habits can possibly evolve. Most young children can eat a snack between meals without impairing their appetites, but the timing and quantities need reasonable regulation.

After the age of six or seven most children eat larger quantities and a greater variety of foods. Parental concern about inadequate food intake almost disappears unless the anxiety has a profoundly neurotic basis. In fact, with older children I find that problems of *overeating* outnumber those of anorexia. I have seen many children, considered by their parents to be unusually poor eaters in early childhood, who subsequently became grossly overweight. Although I agree with Bruch[7] that obese children are often lonely and dissatisfied with themselves, I feel that some of these patients, thoroughly indoctrinated in their early years with an overestimation of eating, gorge themselves in an unconscious effort to please their parents. The faddishness of the teen-age diet may be but one facet of the rebelliousness characteristic of this stage of development; however, a persistently bizarre attitude toward food in the adolescent child is an indication of a personality disturbance.

The increasing number of feeding problems in our culture has certain *iatrogenic* origins. In the twentieth century, advances in the science of nutrition have been prodigious, and this knowledge has been properly acquired by the physician. In the judgment of many,[1, 3, 32, 36] however, some practitioners tend to overemphasize the physical and nutritional elements of a problem and fail to appraise the difficulties of the whole child, psychological as well as physical, in his own unique environment. Spock[33] states that "we have a fantastic number of feeding problems in this country (that not only produce malnutrition but are often the starting point for all kinds of subsequent problems) because pediatricians have been aware of the caloric and chemical aspect of nutrition but have usually paid no attention to the emotional aspects of feeding."

It is "a consummation devoutly to be wish'd" that each physician develop the ability to look into himself, his attitudes and his methods of practice. The authoritative physician who is impressed with his self-importance may find it difficult to appraise honestly his own routines and relationships with his patients. Such a self-evaluation, how-

ever, may reveal practices which confirm the parental feelings that the really important matters in the child's life are related to weight gain and the quantity and quality of foods eaten. The pounds gained in the first months of life may be a reason for congratulatory comments by the doctor, but preparation for subsequent diminution in appetite with its concomitant smaller weight increase may be absent. If the office visit consists essentially in a physical examination followed by questions about foods eaten and the distribution of a list of new items to be added to the diet, the physician's own emphasis on the primacy of this area of living will make an enduring impression on the parents.

The physician, too, might consider whether his judgment is affected by the insidious influences of advertising, by competitive feelings toward his colleagues and by the entreaties of mothers for more and varied foods for their children. It is, perhaps, not too important if we buy a particular brand of soap because of its pervasive advertising. The doctor, however, must realize that he may be unwittingly ensnared into recommending foods, "tonics" or medicines by the influence of direct mail advertising or the "ballyhoo" of the advertisers in his medical journals. For instance, he might not really be disposed to suggest the feeding of solid foods to babies at six weeks of age, but he might do so, directed by the comfortable feeling (arising from the advertising stimuli) that it is a sound procedure. Forbes[13] comments on current problems of overnutrition and the toxic effects of excessive vitamin ingestion resulting, in part, from promotional advertising.

Other stimuli to medical recommendations of questionable value may arise from feelings of competitiveness with colleagues. Some physicians develop an extraordinarily fashionable practice. Their patients receive the newest medicines, the most modern feeding advice and the most "progressive" advice about child rearing. Even the mature physician may at times become a little uneasy about his conservative practices when the new approach seems so successful. A searching appraisal of motivations may be helpful because the physician, as well as the patient, can develop feelings of insecurity which are advantageously brought into consciousness.

Sometimes the importunities of mothers for more foods for their babies remind me of the begging of a small child for more candy—in both situations there is need for a friendly authority who can deny the request. At present, although babies' diets are being supplemented with *solid foods* at progressively earlier ages (of 2000 patients, 88 per cent were given food before three months and 66 per cent before eight weeks[5]), there is a widespread questioning of the wisdom of this trend. Beal[5] reported that an increasingly large number of mothers found difficulty in the feeding of solids during the early months. György[16] writes that early mixed feedings of infants have no reasonable

scientific support, while Hill[17] agrees that there is no proof that foods offered before four to six months of age are of value either physically or psychologically. The study of Andelman et al.[4] confirmed these concepts when they found no significant difference in the status of premature infants fed meat in the early weeks of life as compared to a control group. Gesell and Ilg[15] call particular attention to individual variations in neuromuscular maturity permitting the successful ingestion of solids. At a month or six weeks of age some babies will spit, choke and cry when an attempt is made to give solid foods. If the mother is convinced by her physician's attitude (at times, of course, incorrectly interpreted) that the baby must have this food for its optimal health, she will try to force him to take it. The memory of these persistent, unpleasant associations to feeding is likely to have significance in the development of subsequent problems.

Eating Difficulties Related to Problems of Adjustment

The second main group of eating difficulties is made up of those children one of whose symptoms is loss of appetite, but who, on investigation, present problems in their adjustment to some life situation. The publications of Lehman[23] and English and Pearson[11] discuss these problems in detail. The latter authors state that any circumstance which arouses fear, rage, excitement or grief will affect the child's appetite, and they further emphasize that these situations may be chronic as well as acute, so that the disturbance of appetite is persistent.

In our experience, *anxiety* arising from fear of loss of love is a main cause of anorexia in the young child. Such feelings not infrequently develop with the arrival of a new baby in the household. A series of events takes place which leads the child to conclude that his mother no longer loves him. During the pregnancy the mother may be withdrawn and introverted.[9] Subsequently she leaves home for a week, during which time a strange caretaker may replace her. Then the mother reappears with the new sibling, who takes her time and attention and sometimes even appropriates the bed of the older child. Occasionally these events are compounded by untimely enrollment in a nursery school. The patient, convinced that he is no longer loved, stops eating.

Although the sibling-rivalry anxiety may have its origin in inaccurate interpretations, in many other situations the fears of the child have more validity. The food-centered mother who feels rejected unless her child eats "for her" makes her love contingent on the conformity of the child to her wishes. Furthermore, there are parents whose attitudes imply that they will give their love for good behavior, but will with-

draw it if the child misbehaves. Expressions of hostility on the part of the child may evoke frightening outbursts of anger which convince him that his own angry feelings must be repressed if he wishes to be loved. In some families, expectations in the scholastic sphere are so high that the child who does poor or even adequate work becomes chronically anxious lest his performance result in the withdrawal of love. Cold, indifferent attitudes and prolonged periods of emotional withdrawal and uncommunicativeness as signs of parental disapproval are likely to provoke intense apprehension in the child.

In homes where the parental relationships are disturbed the child becomes fearful about the possible loss of a parent through either death or injury when physical violence is present, or through separation or divorce. This fear may be reinforced by anxieties springing from the fantasy life of the child. If the young boy has angry feelings toward his father or is unusually attached to his mother, he may feel personally responsible for the departure of his father if a divorce does occur. Children feel omnipotent and believe that the coincidence of their secret wishes with the reality situation is no coincidence at all. The guilt feelings associated with the loss of the father may underlie the symptoms for which the child is brought to the doctor.

Both food and the process of eating have symbolic significance which pervades our everyday lives. The infant whose hunger pangs are regularly satisfied with milk develops his first love relationship to the provider of the milk. Food becomes a symbol of love not only in childhood, but in adult life as well. Kaufman[22] writes that "foods become endowed with various dynamic meaning according to the person's upbringing, cultural and religious training and personal life experiences." Specific foods may evoke reactions of anger, anxiety or depression, or, conversely, may stimulate emotions of happiness or euphoria, depending upon the particular associations.

It is not uncommon for feeding difficulties to develop when the management of the child's *toilet training* has been punitive. If a compulsively clean mother communicates to the child her abhorrence of the dirtiness of bowel movements, foods which resemble stools in color, shape or texture may be refused or vomited. Furthermore, this anxiety about cleanliness may cause the child to reject any food containing particles that remotely resemble dirt. Similar problems develop when the smearing and messiness which accompany the first years of self-feeding are intolerable to the mother.

Anorexia nervosa, a disorder seen occasionally in children with an obsessive-compulsive character structure, is the gravest expression of a feeding difficulty of psychogenic origin because the very life of the patient is endangered by his extreme aversion to food. In this illness the symbolic significance of certain foods to the patient may seem

bizarre and almost incomprehensible to the physician untrained in psychiatry, but the validity of these associations is well established.[10, 11, 25, 26, 35] The physician's familiarity with the complexity of the symbolic meaning of food and the act of eating will help him gain insight into the patient's problem even though he may need skilled assistance in its treatment.

DIAGNOSIS

When a physician concludes that his patient's feeding difficulty is psychogenic, this diagnosis implies a measure of understanding of the etiologic factors, for the diagnostic formulation is a summation of significant facts rather than one arrived at solely by the exclusion of physical illness.

The doctor must listen to his patient. Although the wisdom of this statement seems self-evident, analysis of actual practices reveals unconscious violations of this principle. As I supervised a medical student in a well-baby clinic recently, I saw him acquire a voluminous number of facts for the chart, but at the same time it was evident that he had failed to gain any insight into the feelings of the mother about her child. The experienced physician permits the mother to tell her story in her own way, and tries to put her at ease by a friendly, interested and unhurried manner. He will be sympathetic and noncritical if he wants facts rather than fictitious data which the mother feels she should present so as to be considered a "good mother" in his eyes. As the history unfolds, the physician hears what is actually being said, but he also is "listening with the third ear."[27] He is aware of the feeling tones present when a particular area is under discussion; he is observant of the mother's management of the child, who may be underfoot at the time; he is alert to the child's reaction to the problems about which his mother is worried; he gains insight into the relationship between the parents; and he acquires a wealth of additional information which may be valuable evidence in support of his subsequent diagnosis.

The pediatrician recognizes that his patient is a member of a family group including a father as well as a mother, and sometimes grandparents, maiden aunts and others who live in the home or nearby. An appreciation of the pattern of this constellation and of the personality structure of those who are close to the child is essential for an understanding of the stresses in the patient's life. The pediatrician, particularly, has a unique opportunity to study his patients and their families by virtue of the routine visits to his office which are an integral part of the health supervision program.

The investigation of a problem which seems to have a psychogenic

origin requires a systematic approach. Although, as previously stated, the parents should be encouraged to describe the difficulty and its background in their own way without interruption, there are usually important aspects of the child's life which are merely mentioned or not discussed at all. For the whole picture, the physician has to fill in the sketch by tactful questioning. In addition to the usual historical data, detailed information is needed in the following areas: (1) development and habit training; (2) relationships with parents and siblings; (3) relationships with playmates and in the environment outside the home; (4) school adjustment; (5) possible traumatic experiences.

PROPHYLAXIS AND TREATMENT

Feeding behavior is characterized by intrinsic developmental sequences modified by a variety of external influences. As the treatment of one phase of an eating problem includes the prevention of subsequent difficulties, both treatment and prophylaxis will be considered in this section. An essential component of the health supervision of children is a program of anticipatory guidance whereby the parents are acquainted with changes to be expected in their child's behavior. The management of the child can thus be correlated with his developmental progress to the gratification of all concerned with his care.

Nonorganic feeding difficulties of young babies are usually easily managed if the problem is not primarily symptomatic of a maternal neurosis. The inexperienced mother with her first baby is reassured when the doctor indicates that the infant's behavior is normal for his stage of development. Although a mother may have been forewarned about the immaturity of her infant during the neonatal period, she will need the physician's reaffirmation of the normality of fluctuations in appetite, spitting up, changing patterns of elimination and unexplained periods of crying. It is helpful for the doctor to appreciate that his relationship with an inexperienced mother is, in many ways, analogous to the mother's relationship with her baby. Just as the goal of child rearing is the evolution of a mature adult, similarly one of the aims of the pediatrician is the guidance of the mother from the period of hesitant insecurity to mature self-confidence in the management of her children.

A program of anticipatory guidance in the first year of life will help the mother avoid errors of management, correct misconceptions about expected behavior and help promote good eating habits. Discussion of the following points has been found to be profitable:

1. Schedules; permissive management in the early months; regular patterns later.

2. Techniques of introduction of solid foods; addition of chopped and home-cooked foods; normality of food preferences.

3. Sucking needs and their relation to time of weaning; techniques of weaning.

4. Expected weight gain correlated with age; changing appetites.

5. Expected growth correlated with body build and heredity.

6. Encouragement of self-help as interest and ability develop.

7. Acceptance of messiness in early years; gradual teaching of manners later.

The anorexic child of preschool age is particularly worrisome to his parents. In my experience most mothers need patient reassurance about the natural diminution in appetite at this stage of development. It is helpful to a mother to learn that most three- and four-year-olds are easily distracted and show changing food preferences. They may eat huge amounts for a few days and then seem to "live on nothing." An analysis of the over-all food intake may reveal an adequate caloric content even though its ingestion is somewhat haphazard. The physician's record of the annual increment in height and weight may confirm this observation, and it is helpful when he can demonstrate from charts or tables that the child's development is within normal limits for his age and physique.

Suggestions for the promotion of an improved appetite can often be made if the child's behavior at mealtime and the atmosphere about the table are examined. The physician will understand the problem better if the mother is specific about the details of the situation, although he should avoid the trap of being expected to give an authoritative judgment on every point. The doctor may make suggestions, using concrete examples to express his viewpoint; it is the parents, however, who must apply the recommendations in their daily relationship with the child.

Treatment of the anorexic child may be expedited if the parents consider their answers to the following questions:

1. Are the portions served too large? Often the young child is given portions only slightly smaller than those served to his parents. He should be offered extremely small portions, perhaps only a few teaspoonfuls, even of foods he may like. "May I have more?" is more constructive than "I can't eat any more" or "My stomach hurts."

2. Are the foods simply prepared and attractively served? Young children like simple foods. They sometimes prefer raw foods, such as carrots, tomatoes, celery or string beans. If the child happens to like onions or curry or other seasonings, there is usually no reason why he should not eat them. The fewer prohibitions, the better. Children like nice appointments at the table just as do adults.

3. Is there a struggle over certain foods that have to be eaten? As

a group, vegetables are most commonly rejected, and many parents feel aggrieved because the child refuses even to taste them. As children grow older, however, they will eat some vegetables, provided the negative associations are not too powerful. Fruits and vegetables are essentially nutritional equivalents.

4. What about manners? Of course, good manners are desirable, and eventually will be acquired. On reflection, most parents would rather have their children eating with poor manners than not eating with good manners. Perhaps, for a while, attention to this state should be minimal.

5. Is there a battle about hand washing? It is wiser to settle for "a lick and a promise" than a pair of sparkling hands unwilling to pick up the spoon. A cake of soap shaped like a bear or a fish and to be used before meals only may solve the problem. Sometimes the mother makes a concession and helps get off the grime with a washcloth—but no discussion.

6. Is the child overtired, overexcited or too hungry? Is the mealtime too long? If the father gets home late, it may be desirable to serve the children earlier. They will not eat much on Christmas or the Fourth of July. The parents may like to linger over the second cup of coffee; the child should be excused when he is through.

7. Is disturbed eating behavior an attention-getting device? Has the child learned that his refusal to eat upsets his parents? Are there more gratifying ways for the child to get "a place in the sun"? Is he included in the conversation at the table?

8. Are tensions aired at the table? Is the father called on to judge and mete out punishment?

9. What about snacks between meals? The anorexic child should not be punished by withholding them. Snacks are best given midway between meals—not continuously from one meal to another. Snack food should be simple and offered in small quantities. Milk taken an hour or two before the meal may diminish the appetite in some children, but this observation is not valid for all children.[37]

10. Is food used in the family's system of rewards and punishments? Although most children like candy and cookies, their intense devotion to sweets is of psychic origin. Children should not be given candy when they are good and deprived of it when they are bad. A portion of dessert should be served whether he eats his other foods or not. (Incidentally, does the doctor give his patient a lollipop at the end of the office visit?) On the other hand, it is unwise to deprive a child of food or a meal as punishment for misbehavior, because unpleasant associations will further impair a poor appetite.

Some parents can be helped to understand their children's behavior by carefully selected reading. Noncritical persons, however, who accept

the printed word as authority may become hopelessly confused by the divergent and sometimes unsound doctrines to be found in the enormous number of publications dealing with child psychology. The books by Aldrich[3] and Senn and Newell[30] present reliable and easily understood discussions of normal feeding behavior and its variants. The pertinent chapters in the widely distributed paper-back editions of Spock[31] and Ilg and Ames[18] are also of value.

The pediatrician is often asked to prescribe a "tonic" for the child. The advisability of the indiscriminate use of iron, vitamins, amino acids or tranquilizing drugs to improve appetite is questionable both medically and economically. The physician must avoid the seduction of advertisements which tout products "for appetite and growth" or claim to "make children *want* to eat." The copy of one recent advertisement reads: "When they don't eat enough or won't eat in balance, here's a new way to help them outgrow their clothes and perk up their lagging appetites." If the patient is in nutritional failure or if he is anemic or rachitic or scorbutic, appropriate specific treatment is indicated; the appetite of the healthy child will not improve with a shotgun type of medicinal therapy.

The child whose eating difficulty is but one symptom of an intrapsychic conflict or of an adjustment problem in his home or school will be helped little by the approach to treatment suggested above. An evaluation of the whole child in his current life situation is an essential prelude to therapy. Although the average physician may need expert help in the diagnosis and treatment of the disturbed child, he should recognize that his judgment and established relationship with the child and his family may be the keystones of a successful result. Significant improvement in the eating problems of this group of patients depends largely on resolution of the underlying difficulties.

The physician will find it desirable to familiarize himself with the resources in his community available to help the patient and his family. The services of psychiatric and child guidance clinics as well as casework agencies may be invaluable in establishing an accurate diagnosis and in carrying through the necessary treatment. It is generally recognized that one important reason for patient resistance to psychiatric referral is a lack of understanding of exactly what a psychiatrist is and what he does. Some laymen invest the psychiatrist with a mysterious frightening cloak, and others still feel that the use of his services stigmatizes them as mentally unbalanced. When the family physician takes the time to interpret the nature of psychiatric care to his patients in language they can understand, they are more likely to accept his referral.

When the patient's anorexia is associated with concern about problems in school, the school system itself may provide guidance through

a counsellor or psychologist, and programs of tutoring or remedial reading are often available. The physician may be able to outline the child's difficulties to a school principal, thereby enlisting his cooperation in the solution of the problem. Resources found in some cities include the services of religious organizations, mental health groups and occupational workshops. The program of a "Y" group, the scouts or a little league baseball team may be valuable in the treatment of a particular patient. The physically handicapped child may thrive (and begin to eat) from the gratification he gets from his musical or artistic training instituted at his doctor's suggestion and implemented with the resources at hand.

SUMMARY

Eating problems of psychogenic origin are prevalent in pediatric practice. The etiology may be related either to the management of the feeding itself or to a more profound problem of adjustment. The physician may unwittingly play a role in the development of parental misconceptions about nutritional requirements, and it is suggested that he review his practices. The diagnosis is made not merely by the exclusion of physical illness, but also by the uncovering of pertinent supportive data. Anticipatory guidance attuned to the growth pattern of the child is the best prophylaxis. The physician can treat the patient most successfully when he has developed a positive relationship with the family and is able to make constructive suggestions rather than negative criticisms. When the patient's eating problem is a symptom of a personality disturbance, referral for psychiatric care may be indicated.

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OBESITY

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There has been in recent years a growing awareness that obesity is a complex condition which presents challenging treatment problems to the physician. According to still widely held older views, obesity was "explained" in rather simple terms, namely, as caused by a positive energy balance, which means that a person grows fat when his caloric intake for food is greater than his energy expenditure for metabolic requirements and muscular activities. Nobody will deny that such a positive energy balance exists; as a matter of fact, it is the obvious physiologic mechanism without which there would be no excess deposition of fat. However, this mechanism is part of the symptomatology, not an explanation of the underlying factors.

This concept of a simple etiology of obesity had been preceded by others, among them the assumption that obesity was caused by endocrine disturbances. This theory, too, still has many followers, even though extensive clinical and experimental observations have failed to bring evidence of hypofunction of the thyroid or pituitary gland (or other glands that have been blamed, in turn) and, in many ways, have demonstrated the errors of these theories. The most recent work, in clinical as well as experimental observations, conceives of obesity and its allied symptoms (overeating, inactivity, increased fat storage) as the outward manifestations of a variety of underlying disturbances in weight and appetite regulation. Experimental work with animals has amply documented that multiple physiological disturbances are associated with obesity.[8] These disturbances may be expressed in metabolic disorders or in the regulatory mechanisms. Even though it is not permissible to apply these observations on animals directly to human pathology, the fact itself that in human beings, too, one is dealing with different forms of obesities is firmly established.[6]

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These various theories (and I have mentioned here only the outstanding trends) and the frequently shifting opinions are an expression of the basic uncertainty of our knowledge and of frequent failures in treatment. Yet the practitioner is faced with patients who need help with their weight problems. The pediatrician, in particular, is in a dilemma because he is expected not only to cure the existing fatness, but also to answer questions about the future development of an obese child. Parents ask and want to know whether their child will "outgrow" the condition and spontaneouly correct himself, whether they should exercise strict control over his food intake or whether they are unduly concerned, whether their child is naturally big and whether they are fighting against windmills when they try to make him smaller.

Reports in the literature about the long-range development of obese children are particularly unsatisfactory. There are several follow-up studies, chiefly in the European literature, but they are not very helpful because most were made too early, before the children had become adults, and most figures are given in over-all terms, covering wide age ranges. Even the most careful study I am familiar with, by Mossberg in Sweden,[9] was summarized as indicating that the outcome was variable; that boys, particularly if the obesity had not reached severe degrees, had a more favorable outlook than girls; and that loss of weight during adolescence was frequently only temporary, followed by renewed increase later on.

One reason for the uncertainty in the whole field is the fact that in the past all cases of obesity (with the exception of clearly recognized pathology) were lumped together as if obesity were a uniform condition. This it is not, and it is necessary to recognize that what is commonly called "simple obesity" is far from uniform; there are different forms of obesity with different prognosis. Obese people differ greatly in their whole development, in their capacity for adjustment and performance in the face of life's stress, in their eating patterns and the stability or imbalance of their weight regulation. In short, they suffer from different forms of obesity. The differential diagnosis can be made with a fair degree of accuracy through the study of the life history and the weight curve, psychological tests and psychiatric evaluation. These procedures are time consuming, yet until we have simpler methods they are necessary for recognizing the different forms of obesity; without this effort a rational approach to the whole problem is not possible. There is every reason to expect that laboratory tests will soon become available for the differential diagnosis of the different forms of obesity and thus make the diagnosis easier. I shall focus in this discussion on the question of how to arrive at a valid prognosis.

My observations were made in the Department of Pediatrics of the

College of Physicians and Surgeons, on a large group of fat children (over 200), from 1937 through 1940. In all of them obesity had developed before puberty. Included in the study were all obese children who came to the various departments of the Columbia-Presbyterian Medical Center, not only those who came directly to the Pediatric Clinic for diagnosis and treatment of obesity. The only exceptions were children with definite mental deficiency so severe that they were unable to attend public school.

The study was undertaken at a time when endocrine theories about the etiology of obesity were in vogue, and its first goal had been to become more specific about these endocrine factors. An outstanding early finding was the recognition that the concepts of endocrine dysfunction, in the way they were held at that time, were glaringly wrong. Contrary to what one would expect of children suffering from either hypothyroidism or hypopituitarism, it was observed that fat children were advanced in all phases of physical development.[1] In the later psychological studies it was noted that this excessive size was a serious emotional and social handicap for many of these children. The most startling finding was that puberty occurred conspicuously early in obese girls, and was definitely not delayed in obese boys, as had been implied by the commonly used diagnostic labels of hypogonadism and Froehlich's syndrome. The validity of these observations has been widely confirmed in the literature and through repeated follow-up observations in our own group.[4]

Another conspicuous finding, recognized early in the study, was the extraordinary, intense emotional involvement of one or the other parent, usually the mother, with the fat child. This expressed itself in exaggerated concern for the physical well-being of the child, whereby overstuffing him with food and protecting him against any physical danger, resulting in enforced inactivity for the child, were the conspicuous manifestations. These two factors, overfeeding and inactivity, offered a plausible explanation for the development of obesity. One might have expected that doing the opposite, namely, inducing the children to eat less and exercise more, would be a logical remedy. When this was put to the test of practical application, not only did the children refuse to follow a diet, but the parents, too, felt threatened by changes in the daily habits of living. When first reported, this was considered a startling finding.[2, 3] A number of recent studies have concerned themselves with the failure of dietary treatment and the poor cooperation of obese people, although they are still outnumbered by the glowing reports of great weight loss on this or that new diet or pill or injection. Such reports fail to mention the short life of such successes. It is now generally recognized, however, that children, or adults who became obese before the age of 10, have a rather poor

prospect of following a diet and of becoming slender.[10] This type of observation stimulated an inquiry into the living conditions of these children, particularly into the interrelationship within the family.[7]

An effort was made to find out what happened to these children as they grew up.[5] The follow-up observations were carried out in 1953 and 1954. Less than 25 per cent of the original group was reached, conspicuously fewer fat girls than fat boys. The figures on the frequency of the different development are given only as an index of certain trends, but with no claim for accuracy.

The findings were analyzed according to the persistence or absence of overweight, and according to the over-all social and psychological adjustment. Four possibilities exist for their combination, and all four combinations were observed: (1) slenderness with good adjustment (found in 15 per cent of the cases; (2) continued obesity with good adjustment (20 per cent); (3) slenderness with emotional maladjustment (25 per cent); and (4) continued obesity with emotional maladjustment (40 per cent). It is of practical importance than an assessment of the emotional development of the obese child and his interaction with his family, the evaluation of his weight curve, including its stability or fluctuations, permits a prediction of this long-range development with a fair degree of accuracy. The amount of overweight is of less importance even though severe degrees of obesity usually indicate serious maladjustment. In no case was there a favorable outcome where emotional disturbances had been recognized, but adequate psychiatric treatment had not been carried out.

An embarrassing contrast between the amount of medical treatment and the later development became apparent. A favorable outcome, that of slenderness or moderate obesity with good social adjustment, was achieved only by those who had had the least amount of medical attention, no endocrine injections and no enforcement of dietary restrictions. These patients had established control over their weight during adolescence or in early adult life, on their own initiative, not under outside compulsion. In the other groups efforts at dieting had increased the constant fighting in an already overstrained family situation, or the strain of dieting, even though self-imposed, had reinforced existing psychological problems. The outcome was an unfavorable total development, in spite of temporary weight loss.

Even poorer was the outcome in cases with continued endocrine treatment. The patients who had received the largest amount of endocrine products were suffering from the more severe forms of mental disturbance, in some instances of unmistakable psychosis. This, of course, was not produced by the endocrine injections themselves. Parents who are dissatisfied with or anxious about a child's atypical development will continuously search for the kind of treatment that

promises to alter and transform the child, and are apt to resist an approach directed toward their own disturbed involvement. Such continued pressure and discontent may become manifest in a child as severe mental illness, even as psychosis.

CASE I. As an illustration of a favorable outcome, namely, that of truly outgrowing the condition, I wish to give briefly the development of a boy whom we first knew when he was 2½ years old and was 100 per cent overweight. An effort was made to reduce his food intake. The mother soon recognized that she, as well as the child, felt better if she permitted him to eat as much as he wanted, and the Clinic supported her in this attitude. This did not seem to be an unreasonable decision, since the child no longer ate too much for his size and constant activity. Evaluation of his weight development at that time had illustrated that after the rapid increase of weight during the first year of life he had reached the "stationary" phase of obesity, although he continued to gain weight, but at a rate commensurate with his increase in height.[2]

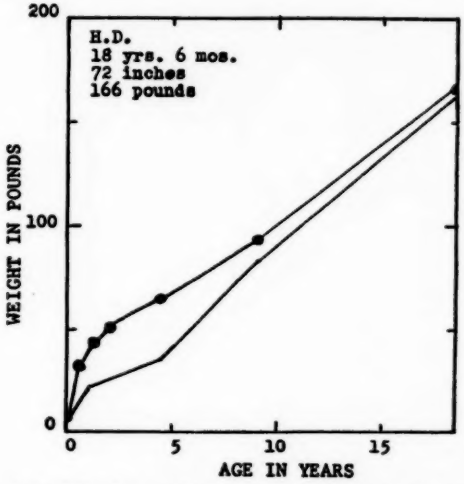

Fig. 1. In this and the following graphs the lower line indicates the average weight for height and age.

At 9 years of age he was a somewhat chubby but athletic-looking, outgoing youngster who did well in school and had many friends. There was real eagerness of sharing the activities of other children and of becoming independent from the ties to his family. At 18½ years he was 72 inches tall, weighed 166 pounds and appeared in no way different from any other well adjusted all-American boy (Fig. 1). An evaluation of the whole life situation, including psychological tests when the child was young, had permitted an optimistic prognosis. The conflicts between the parents which had caused the mother to overindulge the child and to feed him excessively could be resolved. They had been working as a couple for another family, and there was much stress on keeping the child quiet. There was also much quarreling between the parents, and this did not improve until the father found an independent job and established a home of their own. The father, who had expressed contempt for the child's fatness and had blamed the mother for it, now began to pay attention to his son and took pride in helping him acquire athletic skills. This boy had not been concerned about his weight or eating habits since he was about 12 years old. He knew about his past

obesity from having seen pictures, but he felt that it had not played a disturbing role in his development. Incidentally, there was no obesity in other members of the family.

CASE II. An example of fairly good adjustment in spite of continued obesity is the development of a 27-year-old man who was sent to the Clinic when he was 7½ years old because the school felt he was too heavy (Fig. 2); his weight was 95 pounds. The mother tried to keep him on a diet for a few months, but then gave up because there was no real concern about the obesity: "The family thinks the bigger he is the better he is." The mother was moderately heavy, but did not consider herself too fat, and the father was described as a husky, capable man. We agreed with her decision of not wanting to create conflicts by trying to make the child reduce.

When the boy was about 12 years old, the mother became suddenly concerned about possible sexual maldevelopment. A physician had frightened her that puberty

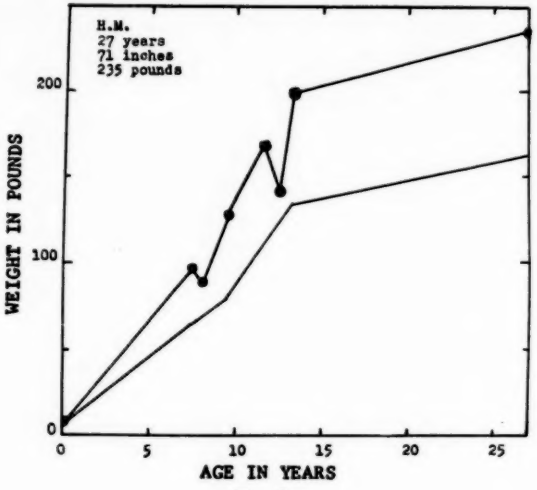

Fig. 2.

would not take place without hormone injections. After much debating the mother decided to let the boy have this treatment. He also was placed on a strict diet. He lost a good deal of weight, but promptly regained it. It is of interest that the mother, in retrospect, reversed the facts and blamed the Clinic for having insisted on glandular injections which had made her and her son so miserable.

He made repeated efforts at reducing, going down to as low as 200 pounds, but he felt better at the higher weight (about 220 pounds). He does not particularly like being so heavy, but accepts that that is the way he is built. He is competent in his work, has been married for 5 years and has 2 children.

Common to the patients in these two groups with a fairly good adjustment to life (representing approximately one third of the patients seen in the follow-up study) is the fact that they came from homes with a basically congenial atmosphere where the pressures and tensions were such as not to preclude the growth of these children in independence and maturity. This is particularly noteworthy because most of these children were only children, like the two examples. Most con-

spicuous in the history was the fact that they had not been persecuted by their parents for being fat.

CASE III. The next example is that of a young man who had been fairly successful in controlling his weight, but continued to be constantly occupied with his weight and diet. He felt that the whole course of his life had been adversely influenced by having been fat. His father had died before his birth, and he had lived in an orphanage until the age of 11 because his mother worked to support her children. At that time she remarried, thus establishing a home for her children. When he was finally reunited with his mother, he gained weight rapidly and became really fat when a stepbrother was born, whom he envied for the privilege of being properly cared for by his mother. He felt that he had never got what was coming to him, and was bitter and resentful and provocative in his behavior towards the family. There is no doubt that he was

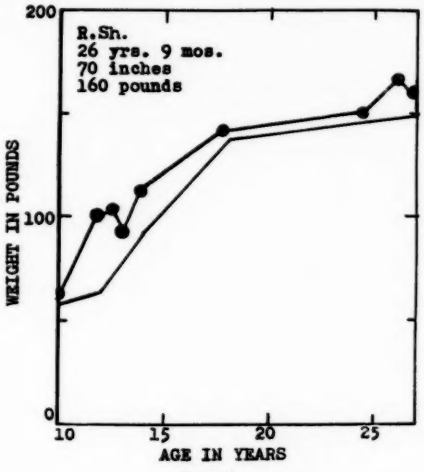

Fig. 3.

often ridiculed for being too fat. Even after he had lost the excess weight the feeling of being too big persisted, and he suffered from a sense of physical inadequacy and kept himself apart from the ordinary activities of his age group.

He served his stretch in the Navy, and after graduating from college he obtained a promising position in a publishing house. He was happy, at least for a while, in the congenial atmosphere where he found friends and recognition for his work. In this state of eased tension he gained some weight, which to him was a reminder of his unhappiness and inadequacy. He resumed his ascetic ways with increasing bitterness about the injustices of life (Fig. 3).

Fat children and adolescents belonging to this group make up a large portion of the patients who ask for help with reducing in the hope that this will solve their problems of living. In some the symptoms of disturbed behavior are more obvious than in the cases just described; in others they are more discrete. Some succeed in keeping their weight under control for long periods and become what I have called "thin fat people,"[1] who appear slender, but whose underlying

emotional problems have remained unresolved and are as disturbing as ever. This development has been observed more often in women than in men. The common feature is that these people continue to be weight- and diet-conscious throughout their life, or until they find a truly better adjustment.

CASE IV. The futility of reducing without resolution of the underlying problems is illustrated by the history of a 36-year-old man weighing 255 pounds for whom gaining and reducing were the outstanding symptoms of severe maladjustment (Fig. 4). For 20 years he had made many efforts with a total loss of more than 450 pounds. He had been a fat child and weighed 265 pounds when he was 16 years old. At that time an older sister took him in hand, insisted on treatment and supervised his diet; during the next year he lost nearly 100 pounds. But he could not maintain the lower

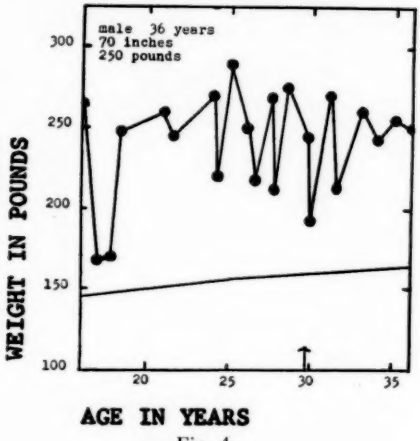

Fig. 4.

weight. Whenever he was confronted with difficulties in his job or family, with marital discord or illness or accidents, he would gain enormous amounts of weight. Any decision to make a new start in life was associated with reducing at record speed; he would recite the exact figures, such as having lost "50 pounds in as many days." The hectic weight curve reflects his many efforts to make a better adjustment. He was haunted by fear of failure, of not living up to expectations, and the feeling of being an object of ridicule. He sought psychiatric help when he finally recognized that his problems in living could not be solved by reducing. This man was seen in private consultation. He had not been part of the original clinic group.

In 40 per cent of the patients who were seen in the follow-up study the obesity had persisted or had become progressively worse, and was associated with severe emotional maladjustment. In all these patients signs of serious emotional disturbance had been recognized during childhood, through psychiatric case study as well as psychological tests. Only in exceptional cases was the family willing to accept psychiatric treatment.

Since the follow-up observations were rather incomplete, it is prob-

able that more patients with persistent difficulties appeared for the conferences than those who were doing well. It is thus impossible to say whether the high incidence of severe personality problems in our group is a true index of their occurrence in the total population of obese children and adolescents. Other studies, too, observed a high percentage of severe personality disorders in obese youngsters,[10] a fact suggesting that our figures are probably representative.

CASE V. I give as an example the development of a 25-year-old man weighing 265 pounds, who had come to the clinic at the age of 10, weighing 134 pounds (approximately 90 per cent overweight). The school was concerned about his obesity and his

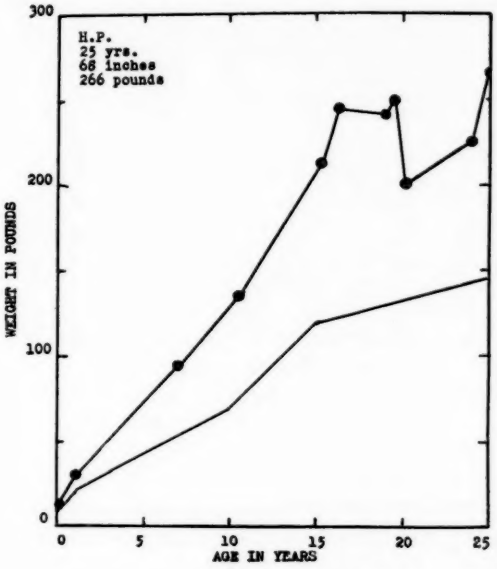

Fig. 5.

restless and bizarre behavior. He had always been a chubby child, but during the last 3 years there had been progressive increase of his weight. The mother, too, was markedly overweight, which she attributed to her constant nibbling because she was "too nervous not to eat." The boy was a voracious eater and had no intention of following any diet or altering his living habits and becoming more active. His bizarre behavior in school was an effort to draw attention to himself. His contact with other boys was poor, and he spent all his free time in the movies, or just sitting around the home, always eating.

The mother was overpowering in anything she did or said in relation to the boy. "I cannot trust him" was the leitmotif of all her talking. She would still take him to school and give him a bath, "because I can scrub him cleaner." She would not permit him to help with anything in the home because it made her too nervous to see him do it so slowly.

The father had a warmer and more stable relationship with the boy, but he was overanxious as far as letting him go out alone was concerned. He had permitted his

older son to share in all outdoor activities, but felt he could not trust this clumsy fat boy. "When he falls and lands in the gutter, he just stays there; he doesn't know how to take care of himself."

The need for psychiatric treatment was recognized, but the mother wanted something concrete to be done that would change her fat son into an alert and athletic boy; nothing else would do. She refused psychiatric help and to come to the hospital "just to be talked to"; instead, she took the boy to private physicians for glandular injections.

At the time of the follow-up visits his weight had steadily increased, as had been anticipated. At 16 he left school and made some effort to become independent, staying as long as 6 or 8 months in messenger positions or other unskilled work. There was one serious effort at losing weight—when his brother came back from the Army and was disgusted with him for looking so bloated. He regained weight rapidly when the expected rewards were not forthcoming, and a steep increase occurred after he had lost his last job, a year before he was seen in the follow-up examination. He now spent his days sitting in front of the television set. He still talked in an overeager, friendly, half-clownish way, describing in funny details his inability to resist food. He felt he had nothing to look forward to in life. He no longer could find any kind of job and saw no way of becoming independent.

When pressed whether he really had no plans or ambitions for the future, he suddenly admitted that he had dreams of success and that his plans were "immense." "Someday my boat is going to come in, and then I am going to buy my folks a house in the country." His great dream was to become a fat comedian and to appear on television. He was a great admirer of the several fat men on television, and he listened to all their programs and memorized their funny stories and jokes. One day he would be discovered and become a success. The complete fulfillment of his dreams would be to be slim and rich. Then he would be the hero of all the beautiful girls whom he now doesn't even dare to look at. "Then I'm going to have one woman for every night in the week."

Manifestations of maladjustment were as obvious, or even more severe, in all patients whom we rated as belonging to this group. Several had become frankly psychotic. Truly tragic is the fact that in all cases the seriousness of the emotional problems had been recognized during childhood and psychiatric help had been offered, but had been rejected by most parents. As in the case described, they wanted the child "changed," and endocrine injections or enforced reducing regimens were expected to perform this miracle. In such cases it is tempting to blame the parents' attitude for the disastrous course of events. This certainly plays a role, but it represents only one side of the problem. Their inconsistent and frightened search for a magic solution is often aided and abetted by conflicting medical advice. Whenever a family seemed ready to listen to a physician outlining a treatment program aimed at correcting the severe emotional and interpersonal problems of the whole family, there was always another physician ready to promise a "get-thin-quickly" cure. This confusion in the medical approach adds to the perplexities of a family faced with the difficult problems of a child who seeks refuge and comfort in overeating and withdraws from the efforts and pains of "growing up." In many instances this misleading medical advice had been offered, or nearly forced upon a family, when there was a consultation for some other minor illness. Comments such as "I could have made a man out

of him if you only had brought him in time" (made to the mother of a 20-year-old schizophrenic man with homosexual tendencies) not only provoke severe guilt and anxiety and thus increase the difficulties, but also completely disregard the fact that patients, like the particular man about whom the remark was made, usually have received enormous amounts of endocrine treatment, often in spite of advanced and physically adequate sexual development. This point needs stressing because in spite of all the evidence to the contrary, the belief in the magic of "the glands" seems to die hard, and many parents of fat children are as apt to be confronted today with the same insoluble dilemma of "injections or no injections" as they were during the heyday of endocrine treatment in the thirties, when the uselessness, or even harmful effect, of this approach had not yet been firmly established. A more rational approach to the whole problem will not come about until the medical profession takes notice of the extraordinary close interaction between physiological and psychological factors in the development and treatment of obesity.

It is easy enough to produce remarkable loss of weight through dieting and increased physical activities, provided the child is capable of following instructions. It requires psychological awareness, skill and patience to help a child accept the necessity for changes in his eating and activity habits—and even then results are often short-lived if not maintained by an inner motivation and readiness to approach life in a more independent and mature way. This can be achieved best, and without too much professional help, by those fat children without a strong constitutional tendency toward obesity whose parents have a sound supportive but not coercive attitude toward the child's whole development. Such youngsters will benefit from dietary instructions, but will not apply it consistently until they themselves are ready.

In the majority of cases, however, things do not correct themselves as easily. These difficult reducers represent the baffling, often frustrating, treatment problems which have earned obese patients the reputation of being "uncooperative." In such situations the real problem is with the medical approach, which attempts to rob the patient of a necessary, even though faulty, mechanism of maintaining a precarious life adjustment. In order to see the whole problem in its truer perspective it is necessary, for us as physicians, to step outside the conventional and popular frame of reference that puts the blame on the state of obesity as the *cause* of the maldevelopment. It is necessary to recognize that *obesity is only a symptom*, which, however, in turn precipitates new disturbances and reinforces existing problems. The excess weight can and should not be removed until the underlying problems have been recognized and corrected, at least to some extent.

This conservative approach to reducing as treatment for obesity is the

outcome of my increasing experience with the severely disturbed children and adolescents, which was gained chiefly in private practice and on patients referred by other physicians after the importance of the psychiatric problems had been recognized. My subsequent remarks are based primarily on these more recent observations, which permitted me to become intimately acquainted with the problems of obese children and different members of their families. These observations do not necessarily apply to all cases of juvenile obesity, although each case in which there is a progressive increase of weight is in need of psychiatric evaluation.

In the group with whom I am most familiar the obesity must be looked upon as a manifestation of a disturbed way of life, which involves the whole family, not only the fat child. In a way he is a signal advertising the existence of severe intrafamilial disturbances. This aspect had been recognized early in the study, and in an effort to summarize the multiple manifestations in different families a "typical picture" was constructed as the Family Frame of Obese Children.[7] The fat child is visualized as chained to his mother, who tries to bribe him and to appease through offering of food his longing to join the fun and play of his age-peers. The father crouches disapprovingly, but helpless, in the background. It was recognized from the beginning that a study of clinic patients (particularly during the depression years) had given a one-sided psychological and social picture, and that there was need to supplement this study by observations of patients with a higher educational and economic background.

In my observations in private practice there was greater similarity in the psychological problems than I had anticipated. In spite of the differences in the external circumstances, with no poverty and starvation in the background of the parents, the underlying psychological problems were essentially the same, namely, one or both parents looking upon the fat child as a personal possession, something designed to be of value for their own lives.

There are, of course, endless individual variations in the interaction between the child, father and mother and the outside world. Not infrequently it is a father who tries to find fulfillment for his own emotional problems by keeping one child excessively close. Differences in the type of encouragement or rejection by the other parent and by the environment also play a determining influence. The outstanding pathogenic factor in these families is the fact that the child is used by one or the other parent, sometimes by both, as a thing, an object whose function it is to fulfill the parents' needs, to compensate them for failures and frustrations in their own lives. The child is looked upon as a precious possession to whom is offered the very best of care, expressed in overprotection which inhibits the development of muscu-

lar skills and interferes with adequate social learning, and in excessive feeding. Many parents openly express their dissatisfaction with the sex of the child because the other sex would have better fulfilled their hopes and wishes. The severe confusion in sexual identification which is characteristic of this group can be directly related to these misleading parental attitudes.

The problems of such children and adolescents offer many parallels and similarities to the premorbid personality problems of schizophrenics. This becomes apparent when we do not focus exclusively on the weight excess, but consider also the way in which these children and young people conduct their lives or, more often, fail to cope with reality demands. Defects of adaptation are recognized on many levels of development, often apparent as an over-all immaturity. Deficient social relations are usually described by words such as "withdrawn," "seclusive," and are "explained" as being due to the obesity. Like the schizophrenic, the obese person has an exceedingly low frustration tolerance, will react with sudden withdrawal or undermining hostility to unexpected demands. Associated with this is a sense of helplessness, a conviction of inadequacy and inner ugliness—derogatory and self-destructive attitudes that are compensated for by flight into fantasies and daydreams. These daydreams of the obese, even of those who offer the façade of adequate functioning in certain areas, are of an astounding grandiosity and may deal with a transformation of their ugly physique into glamorous appearance, often with change of sex, and with unlimited power over and admiration from everybody. Often these fantasies are sadistic and aggressive, in contrast to the placid and cheerful outer appearance and behavior. There is an all-or-nothing attitude toward life, and when the unlimited knowledge or power is not obtainable, when there is no way of achieving the unrealistic goals, they are apt to give up in sullen despair—but instead of suffering a schizophrenic break, they will resort to more avid overeating and thus grow still fatter.

Familiarity with these facts is of great practical importance for the management of obesity—though they do not offer an easy solution. Instead of prescribing a reducing diet or more activities, the pediatrician is now called upon to familiarize himself with the underlying personality and family problems of his fat patients. A treatment program should be made only after an exact diagnosis of the physio-psychological interaction. Paradoxical as it may sound, reducing is not the cure for obesity. In many cases it becomes possible only after considerable improvement in the total adjustment has been achieved. The ability to reduce is only a confirmation that such an improvement has taken place.

In most instances it will be the pediatrician's job to effect such

changes, and he is in an excellent position to become the psychological guide for a fat child and his family. Such psychological guidance should avoid the conventional emphasis on the advantages and rewards of being slender—the fat youngster has been hounded to death with such tirades, and this optimistic hope coincides with the unrealistic expectations of the patient—and avoid even more making the child feel embarrassed, guilty or ashamed of being fat. This reproach, too, the child has experienced to the breaking point; his whole life is a recurrence of humiliation and condemnation for being the way he is. The effectiveness of the psychological approach is based on utilizing the doctor-patient relationship in a constructive way. The doctor can be effective through his sympathetic and benevolent interest, which supports the child's low self-esteem. Most important in the doctor's approach to the patient is his serious respect for the youngster's desperate struggle to fight for his own place in life.

Of equal, if not greater importance is the physician's relationship with the whole family. By alleviating the parents' anxiety and excessive concern he may help create the breathing spell, the *Lebensraum*, the child needs for his individual development. In my experience it is often much more difficult to reach and influence the parents in their overindulgent and at the same time overdemanding and punitive attitude. If the parents are inaccessible to ordinary reassurance and redirecting of their efforts and interests, a psychiatric consultation may be of help.

If the problems are of long standing and if there have been many futile efforts at reducing, or if obvious psychiatric symptoms come to the surface, the help of a psychiatrist will be needed to resolve them or to ward off a complete breakdown. It is well to inform the child and his parents that psychiatric treatment has as its goal the resolution of emotional conflicts and interpersonal difficulties; it is not a special trick to persuade a reluctant fat patient to stop eating. However, it can help a fat child to be successful in his struggle to dissolve the overintense ties to his parents and to achieve true independence and a sense of identity, and thus become able to control his weight.

SUMMARY

Obesity has been discussed as an integral part of growth and development. In contrast to prevailing concepts of its simple origin, explaining it entirely as resulting from a positive energy balance, obesity must be considered a complex and far from uniform condition, symptomatic of a variety of underlying disturbances, many of which are still unknown.

Biological, emotional and social factors can be recognized in each case, and they interact in a variety of ways.

In spite of the large area of ignorance about basic biological disturbances, it is possible to make a fairly accurate prediction about the long-range development of an obese child through a comprehensive evaluation of his weight curve and the circumstances of his life.

Follow-up observations, extending over more than 20 years, revealed a high correlation between a congenial family environment and a favorable outcome, with slenderness of a stable condition of overweight and good social adjustment in adult life. Characteristically, these families had been comparatively free of anxious or punitive overconcern with the weight of the child.

The outcome was unfavorable, with progressive obesity, or artificially maintained thinness combined with poor total adjustment, in some cases frank psychosis, when there had been intense emotional involvement of the parents. Characteristically, these families showed unrelenting preoccupation with the excess weight and were inaccessible to reassurance. The paradoxical relationship was observed between the extent of medical attention and the long-range development. The most unfavorable outcome was observed in those patients who had received extensive endocrine treatment or in whom diets had been enforced.

Weight reduction is not a cure for obesity. It should not be attempted without evaluation of the emotional stability of the child and the home, and, in cases of disturbances, not until after a considerable improvement in the total adjustment has been accomplished.

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SLEEP DISTURBANCES IN CHILDREN

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Sleep disturbances are commonly encountered in pediatric practice. Often they are mild and temporary or satisfactorily responsive to educative and hygienic measures. Occasionally, however, they are severe, and when associated with other behavior problems, as they often are, they may be indicative of so much emotional disturbance that psychiatric as well as pediatric investigation is advisable, and psychotherapy may be indicated.

Some indication of the incidence of sleep disorders in more or less emotionally disturbed children may be seen in the frequency with which parents have complained of sleep disturbances in 1000 children consecutively referred to the Stanford Child Psychiatry Clinic. In taking the histories of these 1000 children it was routine to inquire about sleep habits and to record any deviations which were of concern to the parents. In this series of cases 188 complaints concerning sleep were recorded. The incidence of the various complaints, in the order of their frequency, was as shown on page 630.

THEORIES OF THE NATURE AND SIGNIFICANCE OF SLEEP

Sleep has been a subject of interest and fascination to philosophers, poets and scientists from time immemorial. In 1913 Pieron was able to report no less than 3000 works on sleep, though few of these are of scientific interest today. Since then, however, scientists have made considerable progress in the study of sleep from both the physiological and psychological standpoints. The extensive interest in lethargic encephalitis, described by Economo in 1917, led to a mapping out of the

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Sleep Disturbances	*Number of Complaints*
Restless sleep	52
Talking in sleep	27
Nightmares	25
Irregular sleep habits	19
Night terrors	15
Walking in sleep	13
Objection to going to bed	7
Insufficient sleep	6
Grinding of teeth in sleep	6
Difficulty going to sleep at bedtime	5
Crying out in sleep	4
Wakefulness at night	4
Bad dreams	3
Excessive drowsiness	1
Excessive sleep	1

neurophysiological structures concerned in sleep. All investigators are now agreed as to the presence of a sleep-regulating area in the hypothalamus. It seems probable that the activity of this center maintains the waking state. Elimination of the excitation caused by this hypothalamic activity results in sleep. Destruction of the area causes a pathological somnolence. Recently the activating function of the reticular system in the brain stem has also been implicated in the sleep-wakefulness cycle.[13]

There is general agreement that sleep is one of the primary necessities of life, serving both biological and psychological needs. The biological object of sleep, though not well understood, may have something to do with recovery from fatigue, possibly other aspects of physical recuperation which are not yet known, and, thus, the maintenance of physicochemical homeostasis. Without sleep, a person not only feels fatigue, but also eventually becomes irritable, emotionally unstable, and unable to function effectively. Extremely prolonged sleeplessness can result in tissue injury and death.

The concomitant psychobiological object of sleep is the maintenance of instinctual and emotional equilibrium. During the day, to some extent in everyday normal living, and to a greater extent at times and in certain situations, the impulses and wishes of the individual collide with the hostile resistances and demands of the environment. This results in feelings of frustration and in the arousal of anger and fear. Without sleep, these hostile feelings and anxieties may accumulate to a level beyond that of the individual's tolerance and control. The periodic, temporary cessation of response to outside stimuli and the associated withdrawal of interest from the outside world, on the one hand, and the blocking of the motor brain centers, on the other, thus give sleep the character of a recurring psychobiological protection and defense against dangerous impact between inner and outer dynamic forces.

The emotional tensions aroused during the waking period, then, tend normally to subside during the sleep period. When the tensions are great, however, normal sleep processes may not be adequate for their tasks. Great anxiety, for instance, may interfere with restful sleep, resulting in various degrees of restless sleep or insomnia. Strong, unacceptable impulses, also, together with their accompanying anxiety, may discharge themselves in dreams in more or less disguised ways (bad dreams, nightmares). Sometimes the force of the otherwise submerged impulse is so great that it breaks through the motor blocking, resulting in the acting out of the dream (sleep walking, sleep talking) or in the physical expression of the accompanying terror (night terror). It can be seen, therefore, that sleep is both a physical and mental restorative. It is a complicated process, whose normal functioning can be disturbed by either physical or emotional disorders.

DEVELOPMENT OF NORMAL SLEEP PATTERNS

It takes about five years of gradual change for the infant's short cycles of sleep and waking to become the single night-day cycle of the adult. The newborn baby alternates between the phases of the cycle every three or four hours, the awakenings being related ordinarily to the periodic recurrence of hunger. As the baby gets older, dominance shifts gradually to the phase of wakefulness. The periods of wakefulness during the day increase in length, and the number of naps decreases. The period of sleeping at night soon lengthens so that some time between three and eight weeks of age most infants are able to sleep through the whole night, but it is five or six years before a nap during the day can be dispensed with.

Once a more mature rhythm of sleep has become established, it tends to persist through the functioning of the internal regulative mechanisms, which are to some extent, though by no means entirely, independent of the activities of the waking period and of external events. The sleep-wakefulness rhythm, therefore, is established in part by the physical requirements of the organism, and in part by conformity to custom and habit. There is, however, not only great individual variability in the sleeping and waking hours and periods in infancy and in their changes with increasing age, but also in the sleep requirements and patterns of children of all ages.

A few infants at birth react in an exaggerated way to stimuli, startling and waking easily, and sometimes not only thrashing about restlessly in their sleep, but also fretting and crying frequently when awake. Such irritability, sleeplessness and fretfulness, even screaming at times, may be due to the discomfort resulting from physical birth trauma. An unstable, hypertonic or hyperactive condition, however, may be a

temperamental deviation—in some instances, perhaps, well within normal limits. It may, in other instances, be a response to various kinds of physical discomfort or to an unsatisfying environment due to feeding schedules which do not meet the infant's needs, or to a lack of warm mothering. Sontag, moreover, has observed that a clinical condition characterized by excessive crying, poor sleep, feeding difficulties, loose stools and poor weight gain may occur when the mother is under severe emotional tension during the latter part of pregnancy, and that this condition can persist for weeks or months. In any case, it is important to reassure the parents, when possible, and to help them with their feelings about such infantile behavior, for chronic parental anxiety and resentment aroused by excessive wakefulness and crying at night in early infancy can prolong the infant's emotional discomfort and lead to the persistence of sleep as well as other behavioral disturbances.

During the second year, usually by about 18 months, the child may no longer go promptly to sleep when he is put to bed. He may play or crawl about the crib, and may cry at times unless his mother stays with him. Around two years he may be demanding of his mother's presence, using whatever excuses he finds effective in keeping his mother with him or in delaying the onset of sleep. From two to three years on he may want to take a toy, a favorite doll, a wooly animal or a snuggle blanket to bed with him; there is no reason why this should not be permitted. Also, between two and three years, bedtime rituals are likely to develop which, properly handled, may foster readiness for sleep.

Many children throughout their childhood are consistently good sleepers and seldom, and then for only brief periods, give their parents any concern in this respect. From the ages of three to six, however, stalling at bedtime, fear of going to bed, restless sleep, and awakening at night are, during periods of emotional stress, common, as are also talking in the sleep and frightening dreams. During this period the child is highly imaginative, and there is likely to develop a number of vague, imaginary fears (phobias), such as fear of death, of the dark, of being alone, of big animals, witches, ghosts, and so on, which may be most frightening during the night. Such reactions, unless severe or persistent, need not be considered particularly pathological or of alarming prognosis. Ordinarily such behavior is temporary and only symptomatic of the anxieties inherent in the growing up and socializing processes.

PREVENTION OF SLEEP DISORDERS

Though it may not be possible to prevent all sleep disturbances in childhood, well-baby and well-child care, whether in private practice

or in well-child clinics, offers an opportunity for the application of knowledge which can materially cut down the incidence and severity of sleep disorders.

The fostering of physical health in itself is an essential factor in the prevention of sleep disturbances, for not only is physical discomfort an almost certain disturber of restful sleep, but physical illnesses may also start bad habits of sleeping which are augmented and continued by the anxieties and uncertainties aroused in the parents by the illness.

Application of the principles of mental health, however, is of no less importance than the fostering of physical health. Whatever the physician can do to promote early a mutually comfortable and satisfying relation between the mother and infant contributes to an emotional foundation which is conducive to satisfactory sleep habits. This means that the mother must early acquire a confidence in the potentialities of her baby and in her ability to give it good care, a confidence which the knowledge, interest and emotional support of the physician can do much to promote. It means, also, particularly during the first year, that the feeding schedule be in harmony with the infant's hunger rhythm and nutritional needs.

During the second year, when the baby becomes a dynamo of physical energy, curious, into everything, saying "No," resisting rigid routines, and displaying temper if he is frustrated, the mother may need considerable help from the physician to establish a balanced disciplinary regimen which will protect and gradually socialize the child without destroying his spontaneity and eagerness to learn. It is most important during the second year, also, that mortal combat between the parents and child over toilet training be not permitted to develop, for conflict over bowel control can, and often does, produce sufficient anxiety to break through in a variety of sleep disturbances. Jealousy of a younger sibling and rivalry with an older sibling are also common causes of disturbed sleep in late infancy and early childhood, and much can often be done, with sufficient foresight, to prevent these from becoming dominating emotional reactions. Hospitalization and operations sometimes precipitate sleep disturbances, particularly in young children, and, again, there is much which the physician and hospital can do to minimize the emotional trauma of such experiences.

Many of the sleep disturbances during the age period from three to six are due to the emotional turmoil associated with psychosexual development. During this period the child becomes aware of his growing conflicting feelings and of himself as a being with impulses of both love and hate. If he is managed without understanding and with anxious threats, he himself becomes filled with anxiety, preoccupied with his unacceptable feelings and thoughts, and unable to find an adequate solution to his problems. Frustration from conflict between his desire

to have an exclusive relationship with the parent of the opposite sex, and his need to come to terms with the fact that his parents exist not only for him as mother and father, but also for each other as man and wife, may add greatly to his emotional tension at this period. Parental threats of bodily injury over masturbation sometimes further complicate the picture, and worry and preoccupation over this are often present when there are severe sleep disturbances. The sexual education and training of the children under the physician's care is another area, therefore, in which he may play a constructive role in the prevention of sleep disturbances. In later childhood, school and social adjustment are areas which should also be routinely investigated.

A general requirement for establishing a diurnal sleep-wakefulness rhythm in children is the maintenance of regularity in the daily schedule of events, such as feeding, bathing, playing, and so on, after the early "self-demand" has been tempered by some maturation and acculturation. As Kleitman[12] says, the process is essentially a kind of time-conditioning, the reinforcement of which consists in doing things on a regular basis. It is important, however, that the infant's daily routine be in accord not only with the requirements of his stage of development, but also with his own specific rhythm needs. To attempt to force an inappropriate routine upon the infant is but to invite trouble, if not disaster.

As the infant grows, his need rhythms gradually shift toward mature patterns, and he becomes more and more flexible in his ability to adjust to environmental demands. The time comes, therefore, when some compromise with the needs of his environment can be comfortably made. His sleep and waking patterns can be gradually fitted into the routines of the home and to the needs of the parents and other members of the family. The point of importance is to watch for evidence of readiness for change and to respond to it appropriately when it does occur. The maturational process itself cannot be hurried. On the other hand, the cues for change should not be missed, resulting in an unwitting attempt to keep the child adhering to a routine which he has outgrown.

Although regularity is an important element in the development of good sleep habits, sleep itself cannot be forced. Attempts to force sleep upon the child are likely to backfire, resulting in emotional reactions which are anything but conducive to sleep, and sometimes in negativistic reactions to being put to bed, and even in a desire to fight sleep.

But if one cannot force sleep, one can provide the environmental situation which is conducive to sleep, which is essentially the reduction of visual and auditory stimuli to a low level, and the provision of a set of familiar surroundings and routines which the child has learned to associate with going to sleep. No measures will be reliably

effective if the child is not sleepy, tired and psychologically ready for sleep. Excessive fatigue, excitement and emotional turmoil, also, may interfere with the onset of sleep. One can, however, usually plan for and bring about physical comfort and emotional calm at bedtime; one can make the routine of going to bed pleasant, see that the sleeping quarters are relatively darkened and quiet, and let the child learn by experience that he will be let alone during the sleep period.

It is usually advisable, from at least the age of six months on, for the baby to sleep by himself, preferably in a room of his own. Spock[16] thinks, also, it is a sensible rule for parents not to take a child into bed with them for any reason. There may be times, when the child is frightened, uncomfortable, or awake at night and fussy, when this seems to be the expedient thing to do in order that the parents may obtain some sleep. There is no question but that a frightened or uncomfortable child should be reassured and comforted as much as possible, but this should be done in his own bed and bedroom, for the habit of finding solace in bed with the parents may soon become hard to break.

It is the general custom in our country for parents to establish a time at which their children are to go to bed and to put them to bed at this time whether or not they are sleepy and, also, whether or not they want to go to bed. Many parents are inclined to be more or less flexible and lenient in making exceptions, but Sears[14] found that about one third of a group of 379 American mothers of kindergarten children were very strict in enforcing sleep regimens. There are often reasons other than the welfare of the child for adherence to the adopted routine. Many mothers, naturally enough, look forward to the few hours in the evening when the children are in bed as a time for relaxation and recreation. Both parents, also, may need and value the opportunity of being together for some time in the evening without the bedlam of childish activities. Certainly parents, as well as children, have rights and needs, and these must be taken into consideration by the physician who is guiding parents in the rearing of their children.

Nevertheless, compelling children to go to bed at a certain hour whether or not they are sleepy is a common cause of conflict between children and parents and a potential cause of sleep disturbance. Conflict over the nap is also common when the child is made to stay in or on his bed for a certain time each day after he has outgrown the need for additional sleep or rest. Whenever conflict from these causes arises and threatens to become acute, the physician should evaluate all the aspects of the situation and, keeping the needs of both the child and his parents in mind, help the parents to find a schedule better suited to the natural sleep rhythms of the child.

The bedtime routine may be invaluable in getting a child psycho-

logically as well as physiologically ready for sleep. While pleasant play for awhile after the evening meal may be most appropriate, it is ordinarily best to avoid overstimulating and exciting activities. Certainly, disciplinary measures should be avoided if possible. A favorite story—the more monotonous it becomes, the better—may bring on a mood of relaxation. The child should have plenty of warning of the approach of the bedtime hour and sufficient time to wind up his activities and unhurriedly to go through each item of the bedtime ritual. The familiar routine of changing into night clothes, brushing the teeth, going to the toilet, saying his prayers, and enjoying the last hug and goodnight, suggests sleep to the child and helps to put him in an emotional state conducive to sleep. Further to-do about bedtime is often not forthcoming if the child has learned by experience that that is that, and that his parents cannot be further lured into giving him their attention.

Although sleeping children should be protected from excessive noise and commotion, it should not be necessary for family members to whisper or go about the house on tiptoe; the child should learn to sleep through the ordinary noises of the household. If the child shows fear of the dark, he may be allowed a little light in his room. If he is afraid of wetting the bed, he should be reassured. It might be mentioned here, in passing, that sending or putting a child to bed as punishment is, as a rule, undesirable, for in the child's mind it associates the act of going to bed or the situation in bed with unpleasant emotional reactions. Going to bed should be pleasurable, and being in bed should ordinarily be for purposes of sleep.

SLEEP DISTURBANCES IN THE FIRST YEAR

Restless sleep or sleeplessness in early infancy is usually the result of physical discomfort. It can, however, be due to an unsatisfactory early mother-child relationship. From the work of Fries, Ribble, Spitz, and others, we have learned to appreciate the importance of a satisfactory early mother-child relationship and the disastrous consequences for the infant of separation from, or rejection by, the mother.

Resistance to going to sleep in infancy on a psychogenic basis usually has an insidious onset and becomes recognized as a behavior problem often by the age of three or four months. One often obtains a history of sleeplessness, irritable crying, or colic from birth on. Usually the parents are anxious and often fatigued. They have held the child, rocked him, walked the floor with him, and given him constant attention in their efforts to make him comfortable. By three or four months, however, when the physical discomfort has ceased, the infant continues to demand constant attention, screaming and fighting sleep if he is

not held or rocked, and exhausting both himself and his parents. Spock[16] states that this form of disturbed behavior can easily be remedied as soon as the parents realize that it is bad for the baby as well as for themselves. He recommends that after putting the baby to bed at a reasonable hour and saying goodnight affectionately but firmly, the parents walk out of the room and let him cry it out. One may expect that the infant will cry for half an hour the first night, 10 minutes or so the second, and usually not at all the third. Spock recommends the same kind of treatment when, as a result of solicitous parental care during an illness, the child begins to awaken at night and loudly demand the constant attention or presence of the parents.

SLEEP DISTURBANCES IN THE SECOND AND THIRD YEARS

During the second year of life the infant's feeling of dependency on his parents and his fear of separation from his mother increase, reaching a peak, usually, between the ages of 21 and 27 months. During this period the child is apt to be clinging, anxious if there is any indication that the mother is going to leave him, even if for only a few minutes, and prone to panicky behavior if his mother does leave him. While in this phase of emotional development he is likely to attempt to prolong the going-to-bed routine, using all kinds of excuses or crying to keep his mother with him, and getting out of bed persistently to be with his parents. Firmness as well as kindness on the part of the parents may be sufficient to handle this type of reaction, which often spontaneously drops out by the middle of the third year, but parents often need help in knowing what to do when the child, in spite of great consideration, patience, firmness, threats and even punishment, continues such difficult behavior. Threats of loss of parental love only further play into the child's fear of loss of the parents. Locking the child in his room and drastic forms of punishment only increase his anxiety; and even if they frighten the child into some degree of compliance, the anxiety is only likely to become expressed in other symptomatology which may be as puzzling and unacceptable as that which has temporarily ceased, if not more so. If letting the child cry it out works, well and good; but if it leads to increasingly panicky and "hysterical" behavior, it is not at all getting at the root of the difficulty.

Anderson[1] recommends in situations of this kind that, after putting the child to bed at the appropriate time, the mother sit near him in a relaxed way where he can see her, until about half an hour after he has gone to sleep. It is suggested that she read, sew or knit, paying him a minimum of attention, and behaving as if she were not at all impatient, angry or afraid that he will not go to sleep, but rather has a job to do. To be effective, this routine must be carried out nightly. Improvement

may occur after a week or two, but even if it must be carried on for several weeks, it should be effective in the end unless there are basically faulty interpersonal relationships in the home which are not being dealt with.

Waking early in the morning, arousing the parents, and thus interfering with their enjoyment of those last precious minutes of morning sleep is another common source of parent-child conflict. Insistence that the child play quietly in his bed may interfere with his association of bed with sleep. It may be better if he is allowed to get up and play with things outside his bed. If the discrepancy between the child's awakening and that of the parents is due to a change in the routine of the latter, as may occur on weekends or holidays when the parents wish to sleep late, no change in the child's routine is indicated. Sometimes, however, the baby falls into the habit of awakening at an unearthly hour—perhaps in the summertime when the sun begins "brighting," as one child put it. Parents often complain, in this situation, that putting the child to bed later at night does not make him sleep later in the morning. As Joseph and Zern[10] point out, however, the apparent failure of the method may be due to the fact that it has not been consistently tried for a sufficient length of time. If the child is kept up an hour later for four or five days—occasionally it takes longer—he will usually adjust to a later waking hour.

SLEEP DISTURBANCES DURING THE PRESCHOOL AGE

The developmental phase from ages two to five is the classic and most usual period of sleep disturbance in children. During this phase almost every child may experience a transient period of disturbed sleep. Most children can overcome this temporary disturbance, but some develop a prolonged disturbance of sleep, sometimes severe.

The basic, dynamic psychiatric principle underlying these conditions is the submerging of intense instinctual impulses of the developmental stages of early childhood in response to the demands of society, represented by the parents. This is in the direction of increased control and socialization of previously less restrained behavioral manifestations of "instinct in the raw." During sleep these impulses become less submerged. If they are not admitted to consciousness even in disguised form, they press for discharge and are acted out as neurotic sleep disturbances. They may, also, be so strong that compulsive, neurotic rituals are necessary to keep them submerged at bedtime. There is, for example, the need to have bed clothes arranged in a certain way, to have a certain object in bed or to hang up one's clothes in a particular fashion. Some children spend hours arranging the situation just so and become highly disturbed if any disarrangement occurs. As

Sperling[15] says, anxiety neurosis is not only *the* neurosis of childhood, but is also the form of neurosis most commonly continued into, or reactivated in, adult life, and responsible for most sleep disturbances in both children and adults.

TYPES OF RESTLESS SLEEP

Restless sleep may become manifest in many ways. Tossing, turning and fitful waking are common. Sometimes there are jerky movements. Rhythmical head rolling from side to side (*jactatio capitis nocturna*) may occur in infants and small children, particularly as the child is going to sleep (the hypnagogic state). This reaction is also referred to as *tic de sommeil* (sleep tic).

Head banging may be somewhat alarming and become annoying to the parents. The child, during the presleep period or if he wakes up or partially wakes up at night, rhythmically beats his head against the pillow or head of the bed. The performance may be noisy and sometimes is so vigorous that the bed hitches about the room. Though some infants and mentally deficient children bang their heads so viciously in fits of anger that the skin of the forehead may form calluses, ordinarily one may reassure the parents that there is no danger of brain injury. Most children bang their heads as a physical release of tension and for the pleasure the rhythmic act affords them. Although the parents may have to pad the crib or bolt the bed to the floor, preferably in a room sufficiently separated from theirs so that they can sleep, the prognosis is ordinarily good, as it is also in the tendency of some children for body rocking and humming or singing themselves to sleep. If such reactions are severe and prolonged, however, investigation into the general emotional adjustment of the child is indicated, particularly if there are other symptoms of maladjustment.

Crying out in sleep is sometimes reported by parents. Talking in the sleep (somniloquy) is a frequent complaint and is not necessarily indicative of any pathological emotional trends. Usually the verbalizations are indistinct and fragmentary and, like dreams, seem to pertain to some recent experience or to express a wish. Grinding of the teeth during sleep is also a common complaint in childhood. Kanner[11] says that it has been reported in 2 per cent of the children seen in his clinic.

The experiencing of psychogenic pain during sleep (hypnalgia) is also occasionally observed in childhood. The child may awaken in the middle of the night complaining of feeling ill, perhaps of being sick to his stomach or of having cramps, and the symptoms may be sufficiently alarming to necessitate calling a physician. Here there is discharge of psychic tension via the somatic symptom. The symptom

fulfills its purpose in the same fashion during sleep as it does in the waking state.

According to Kanner,[11] the children who manifest extreme restlessness of sleep at night are usually children who are also restless, overactive and easily excited during the day. The appropriate treatment, therefore, is not usually a prompt resort to tranquilizers, but rather an investigation into and modification of the situation which produces the emotional tension and hypermotility.

FRIGHTENING DREAMS

By three years of age, sometimes earlier, children may begin to report that they have been dreaming, though it is believed from the observation of early sleep reactions that even infants have some kind of dream experiences. Often the dreams are more or less pleasant; if they are exciting or frightening enough to wake the child, he may go back to sleep shortly or with a minimum of reassurance.

During the preschool age frightening dreams become common and continue to be so during the early school age. Nightmares (*ephialtes, incubus*) and night terrors (*pavor nocturnus*) are both anxiety reactions associated with frightening dreams during sleep. These are the most frequent neurotic disturbances of sleep in children. Although these terms are sometimes used interchangeably, Kanner differentiates them by several characteristics.

The child experiencing a *nightmare* awakens frightened, remembering clearly the fearful dream he has just had. He is well oriented, and as soon as he is calmed down he can tell about his experiences. The incident usually lasts only a minute or two, but the child may continue to think about it and have difficulty going back to sleep. The next day he remembers the incident more or less clearly, sometimes with a sense of dread.

During a *night terror* the child does not awaken completely. He may sit up in bed, jump out of bed, or run about in a most agitated manner. His facial expression is one of terror. His eyes are wide open and staring. Usually he perspires. He is disoriented as to place and persons and may be hallucinated. He may cry, shout, talk more or less incoherently, and clutch at people near him. The attack may last up to 15 or 20 minutes and cannot be cut short by reassurance or calming. Ordinarily it terminates spontaneously, and the child goes back to sleep. In the morning he has no recollection of the episode.

Night terrors are less common than nightmares and rarely continue into adolescence as the latter may do. They are frightening experiences for parents and, if frequent, are usually brought to the physician's attention for investigation. Though measures pertaining to physical

health may be indicated in any child presenting this severe type of sleep disturbance, the cause is to be sought in the emotional adjustment of the child; if the attacks are frequent and persistent, a psychiatric investigation is usually desirable.

SLEEP WALKING

Sleep walking (somnambulism) is the acting out of a dream. In contrast to the activity during a night terror, the walking in the sleep is carried on without display of emotion and with apparent purposefulness, as if in fulfillment of a wish. Although consciousness is clouded, the eyes are mostly open; obstacles are usually avoided; some conversation may be stimulated; and fairly complicated acts such as climbing may be performed. In the young child the walking is often directed toward the parents' bedroom. The child may, however, wander about the house or even away from home, although inappropriately clad.

Typically, the sleep walker does not awaken from his sleep. If he is awakened, he cannot explain what has happened. Caution should be observed in attempting to wake the child if he is in a physically dangerous situation, for the fear from sudden realization of his precarious predicament may interfere with good balance and motor coordination. The dangers from sleep walking were probably exaggerated in the past, though unfortunate outcomes have been reported, and precautionary measures may be needed for the child's protection. Ordinarily, the next day the child has no memory of his acts, though he may recall the contents of the dream.

EXCESSIVE SLEEPINESS AND DROWSINESS

Drowsiness in the morning is often a complaint in emotionally disturbed children whose sleep has not been restful or who dread the activities of the day, usually those pertaining to school. Sleepiness in school, also, may occur if the child is bored or is unable to do the required work. Kanner[11] reports having observed a considerable number of physically healthy, intellectually retarded boys and, less frequently, girls, between eight and 15 years of age, who sleep a great deal during the day as a pastime, because of lack of interest in school, social and home activities, particularly if the parents work during the day and the home life is monotonous.

Drowsiness and excessive sleep may also be associated with a variety of physical illnesses. The mentally deficient infant may be disposed to sleep excessively. Excessive sleep may occur in organic cerebral disorders which attack the sleep-regulating centers of the hypothalamus or affect the interplay of the sleep centers with other parts of the brain.

It is, for instance, an outstanding symptom of epidemic encephalitis, and it typically follows grand mal epileptic seizures. It occurs in overdosages of sedatives and is an aspect of stuporous and comatose states. It may occur at the onset of febrile illnesses or in acidosis, uremia, hypothyroidism, meningitis and other exhaustive or toxic conditions.

NARCOLEPSY

Narcolepsy is a rare condition characterized by recurrent attacks of drowsiness and sleep during the daytime, sometimes as many as 10 or 12 a day. The feeling of sleepiness preceding the onset of sleep is almost irresistible. The sleep itself is normal, ordinarily lasting only a few minutes, and upon waking the patient feels refreshed and wide awake at once.

Narcolepsy is typically associated with another reaction known as *cataplexy*, or emotional asthenia. This aspect of the disorder is characterized by sudden loss of muscle tone consequent to strong emotion, usually laughter, but sometimes anger or fright. The patient suddenly feels weak and collapses. Consciousness is not impaired.

Narcolepsy rarely, but occasionally, has its onset before the age of 10 and is said to be more common in males. It is chronic and of long duration, but there is no deterioration of intelligence. Ephedrine and Benzedrine are recommended as palliative measures. There are those who believe the condition is a psychoneurotic one, and cases are recorded which responded to psychotherapy.

DIAGNOSIS AND TREATMENT

Correct evaluation of a sleep disorder depends first upon an adequate history based upon a knowledge of possible causative factors. The history taking should not only pertain to the description, development and associated circumstances of the sleep disturbance itself, but should also be directed toward an investigation of the emotional adjustment of the child, the parent-child relationship and the emotional atmosphere of the home. It is important, also, to rule out any suspected organic factor; in any case, the best state of physical health possible should be sought.[2]

There may be situations in which soporifics are temporarily indicated, as when the parents or child are quite exhausted or the child is physically ill and needs rest. The indiscriminate and prolonged use of sedatives for sleeplessness is to be discouraged, however, since such treatment is purely symptomatic and leaves the child's underlying emotional conflicts unresolved. It should be mentioned, too, that anxious children sometimes vigorously resist the effect of sedatives,

becoming excited, losing control, and only adding to parental concern and difficulty.

When, as occasionally occurs, it becomes obvious to the family physician that the sleep disturbance is only one symptom of a profound emotional disorder whose treatment will require greater time or experience in the therapy of emotional disturbances than he can provide, he is still performing an essential function if he can motivate and direct the family to obtain the help of a child guidance clinic or psychiatrist trained to work with emotionally disturbed children. There is no substitute for good judgment as to whether a child should or should not be so referred, and the pediatrician or family physician is usually in the best position to make this decision wisely.

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SCHOOL PHOBIA

Diagnosis, Genesis and Clinical Management

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What pediatrician has not been confronted with the child who experiences nausea, abdominal pain or nonspecific malaise recurrently on school mornings, but rarely on weekends? Physical examination reveals an apparently healthy child, and recovery occurs with gratifying rapidity once the hour for school is safely past. The physician may recognize the secondary gain of the symptoms and dismiss them with an indulgent smile as he recalls his own early years. When such episodes are persistent, they become less amusing and may engender a vigorous comment that the patient is malingering and should be packed off to school forthwith. But, somehow, the parents prove unable to induce the child to return to school, and the physician is faced with a family crisis. He may perhaps conclude that the child is too "nervous" or "sensitive" and should be granted home leave for the remainder of the term. To his dismay, the physician finds that the convalescence fails to achieve its presumptive goal in tranquilizing the child and that the difficulty of inducing him to return to school is, if anything, greater with the arrival of the new school year. From the transient "Tom Sawyer" type of school-morning sickness, we have passed to a clinical variant of an important psychologic disorder: school phobia.

I have deliberately placed the problem of school phobia in the context of a symptomatic continuum to emphasize that we are not dealing with a rare psychiatric entity, but rather with a common pediatric problem. There is, let it be said, a world of psychologic difference between the occasional "normal" use of somatic complaints to avoid an unwelcome task, and the phobic child's uncontrollable psychophysiological symptoms. But the transition from one to the other occurs at times in an insidious fashion and will be detected in time only if the pediatrician is sensitized to its occurrence and significance.

The syndrome of school phobia may, of course, present itself frankly as a fear of attending school and provide no diagnostic quandary. More commonly, it assumes a somatic disguise. The child protests that he wants to go to school (and, indeed, part of him does), makes plans to go, but is unable to do so when the crucial hour arrives.

School phobia constitutes an acute psychiatric emergency; the sooner proper treatment is instituted, the better the outcome. Since the pediatrician may be the first to be consulted by distraught parents, it is of considerable importance that he be aware of the pathognomonic signs, understand the psychodynamic structure and be familiar with the principles of the treatment of school phobia. Medical mismanagement is all too likely to have serious consequences; an acute, readily reversible disorder may be transformed into a chronic, almost irremediable one.

Beyond its own intrinsic importance, school phobia serves as a paradigm of neurotic disorders in children, for it illustrates with special clarity the relation between symptoms in the child and the psychologic structure of the family. The principles of its treatment highlight general considerations in the psychotherapy of emotional disorders. Only if the physician, the school authorities and participating social agencies coordinate therapeutic efforts is rehabilitation of the family unit likely to be successful.

DEFINITION

School phobia may be defined phenomenologically as partial or total inability to go to school that results from an irrational dread of some aspect of the school situation. It is accompanied by physiologic symptoms of anxiety or even panic when school attendance is imminent. Somatic manifestations may be the most prominent feature and may take the form of anorexia, nausea, vomiting or diarrhea, syncope, asthenia, headache, abdominal pain, diffuse or focal muscle aches, malaise or even unexplainable recurrent low grade fever. The overt expression of fear of school may be totally absent and may only be inferred from the correlation of symptoms with school days and their absence on holidays. At times the physiologic symptoms are not actually experienced, but only feared; i.e., the child may avoid going to school lest he vomit or faint once he is there.

If the child is able to put his fear into words, he may relate it to a particular teacher or the principal, to one or more of his classmates or to the dread of failing an examination. This frequently leads to well-meaning efforts to circumvent the difficulty by changing class, course or school—rarely, however, with any success. In itself, this leads us to suspect that the manifest reason for the symptoms is not the actual one.

It is essential at the outset that we distinguish sharply between school phobia and truancy. Both lead to irregular or failing attendance, but here the similarity ends. The truant "makes no bones" about his dislike for school, whereas the phobic child wishes he could attend and usually has ambitions that require academic training. The chronic truant starts off for school, but does not arrive, or leaves shortly after arrival; he spends his day pursuing his pleasures on the streets. He has usually been a poor or indifferent student; he is typically aggressive and not infrequently sociopathic. He acquires skill in fabricating excuses to cover up his behavior so that considerable time may elapse before the facts come to light. He stays away from both school and home, unless home is an inviting haunt because his parents are away at work.

The child with school phobia, by contrast, draws attention to his inability to leave home to get to school. Usually he spends the school hours in his home and is very much concerned lest anyone know he is not at school. Typically, he has other fears which restrict his mobility; he may be unable to go to church, club meetings, parties or movies unless his parents accompany him and remain with him. In the usual case his previous academic record has been good so that school authorities are at a loss to understand his behavior. In most cases the acute onset of the phobic state has been preceded by a history of hesitance about going to school manifested by a spotty attendance record, ostensibly because of "colds," "GI upsets," and so forth.

Apprehension about going to school is not uncommon among kindergarten or first-grade pupils. It may occur transiently in older elementary school students at the beginning of a term or upon transfer to a new school. When, however, symptoms persist for more than a few weeks, the possibility of an incipient school phobia must be considered. Unfortunately, there is a prevailing myth to the effect that the normal child, especially the "red-blooded" boy, does not—indeed, should not—like school. This sterotype is a reflection of the anti-intellectual trends of recent years; it contributes, in itself, by shaping attitudes toward learning, to the poor levels of academic achievement now causing national concern in the race for scientific productivity. The case is quite the contrary. A normally intelligent child, offered a decent educational opportunity, will welcome and enjoy his school experience. When he does not, we should examine the quality of his schooling, the attitudes of his family, the mores of his culture and his personal adjustment. *A persistently negative attitude toward school is invariably expressive of social or personal pathology.*

The definition of school phobia offered at the outset of this discussion—partial or total inability to go to school that results from an irrational dread of some aspect of the school situation—is based upon

the manifest symptoms. Johnson and her co-workers[3, 7] have suggested that the syndrome be redefined in terms of an etiologic analysis. The basic difficulty, they point out, is not that of going to school, but rather that of *leaving home*; i.e., anxiety about separating from the parents. This places school phobia within the neurotic category of *separation anxiety*, a usage followed by Kanner.[8] Johnson has defined separation anxiety as "a pathological emotional state in which child and parent (usually the mother) are involved in a relationship characterized primarily by an intense need on the part of both to be in close physical proximity." This widens the focus of our attention from the behavior of the child, so perplexing when viewed in isolation, to the patterns of interaction within the family unit. It implies the necessity for dealing with the emotional conflicts of both parent and child if a successful return to school is to be effected.

The phenomenologic definition has the virtue, however, of stressing the symptomatic manifestations by which the syndrome may be identified. It involves no commitment to an exclusive theory of causation. Although my own clinical experience is in general agreement with the dynamic etiology so lucidly expressed in Johnson's formulation, the issues are neither completely nor quantitatively set forth in this thumbnail sketch of the problem. Nor, as the literature is reviewed, are all students of the subject in complete agreement upon it. Consequently, it would seem best for the moment to adhere to a descriptive statement and to classification by manifest symptoms.

PREVALENCE

There is a dearth of reliable information upon which to base an accurate estimate of the prevalence of school phobia. The relative paucity of psychiatric literature on the subject until recent years reflects the customary mode of disposition of cases: to the truant officer or his equivalent, rather than to the child psychiatrist. Within the past decade, however, cases of school phobia have been referred to psychiatric clinics in ever increasing numbers. For example, the rate of clinic admissions to the Children's Psychiatric Service of the Johns Hopkins Hospital rose from four cases of school phobia per 1000 admissions for all causes in 1948 to 17 per 1000 in 1956. Current figures are approximately 30 per 1000.

Whether there has been any real increase in the actual incidence is a matter for conjecture. It is difficult to argue from clinic figures; most certainly, a larger part of the increase in clinic experience stems from changes in the traditional methods of management, as school authorities and family physicians have become more aware of the psychiatric implications of the disorder. That there is a large unreported reservoir

of cases is demonstrated by the report of Hahn.[5] In a clinical study of school phobia in a suburban Boston area, it was found that about seven children with this problem were being referred to the clinic in the course of a year (about the same as our experience in 1956). When, however, a special study unit was established *within* the school system and the availability and purpose of the service were publicized to the teachers, 24 cases were found in less than four months, a rate some 10 times greater! This verifies our expectation that estimates of prevalence based upon psychiatric referrals will grossly underestimate the number of cases in the school population.

CLINICAL FEATURES

In contradistinction to most childhood psychiatric disorders which affect boys far more frequently than girls, school phobia is no less common in girls than in boys,[2, 13] if not more common.[12] Almost all patients have been of normal or superior intelligence. This is, at least in part, almost a matter of definition. The defective child, who is misplaced in school and is consequently reluctant to attend, can hardly be said to be suffering from an "irrational dread." With appropriate change in his classroom situation, his attitude is likely to change remarkably for the better. There is, however, no inherent reason why a defective child may not be caught in the same web of neurotic conflicts which lead to school phobia in the normally intelligent. The good intelligence of the usual phobic child only emphasizes the fact that the essential problem is not an academic one.

The somatic symptoms displayed by these children when school attendance is imminent are equally remarkable for their overwhelming quality and for their plasticity. Impressive as they may be at 8:30 a.m., they are usually not much in evidence during the rest of the day, on weekends and on holidays, except in the more seriously disturbed child. In the typical case an observer who did not know the history would be at a loss to detect any great abnormality in adjustment from the behavior of the patient in the clinic, at least after the first or second visit. Whereas symptoms may be prominent in the presence of the parents as the child arrives at the clinic, the simple act of closing the door between the patient and his mother may bring about a remarkable transformation in his overt behavior.

Asked to discuss his difficulty, the child is usually at a loss to explain it. He avers his desire to attend and may readily agree to a plan for attendance, only to be unable to carry it through. When the interviewer shifts to a discussion of family affairs, after he has established rapport with the child, significant data are readily elicited. Play

methods, with the younger group of patients, are usually effective in bringing family difficulties into sharp focus.

This remarkable discrepancy between the anxiety and panic when separation is threatened, and the relative normality of behavior under other circumstances is a feature of the majority of children with school phobia who are at an elementary school level. Their symptoms are clearly situational products of a currently active family problem. The adolescents, on the other hand, evidence a much more serious *intrinsic* disturbance of general adjustment. The family stress may or may not be currently active, but its action over a period of years has resulted in psychologic malfunction with a driving force of its own that is no longer simply resolved by a reordering of family affairs. While one will occasionally find such cases in the younger group and, conversely, an easily managed problem in a junior high school student, it has been our experience that there is a great difference in severity in the two groups with a fairly sharp cut-off point at about the seventh grade.

Coolidge et al.[1] and Waldfogel,[13] on the basis of similar observations, suggest that the syndrome of school phobia be divided into (*a*) neurotic and (*b*) characterologic types. Johnson[6] feels, however, that the diagnostic differentiation is unwarranted, since the basic problem is essentially the same in the two groups. Whatever merit the terminologic dispute may have from the standpoint of psychiatric theory, it is important to be aware of the difference (that in our experience has been correlated with age) in the prognosis of the two groups. The skillful pediatrician and school social worker can usually anticipate success from their joint psychotherapeutic efforts with the nursery or elementary school child, but had best refer the older child for more intensive psychiatric care.

It should hardly be necessary to add that the study of each case should begin with a careful investigation of whatever complaints the child may bring about the school. A sadistic teacher, an organized gang of delinquents or an unreasonable academic load may precipitate fear of going to school. If the fear is justified by the external facts, then treatment must begin with an effort at their correction. However, such factors are remarkably rare as a sufficient cause for the development of a school phobia. Even when an unpleasant event has occurred at school as a *precipitating* factor, there is usually good evidence of *predisposing* neurotic elements in the patient.

Pamela R. had an acute school phobia which she related to having been slapped by the principal. He stoutly denied the incident, but admitted it with considerable remorse a week later. He had lost his temper, felt acutely ashamed of what he had done (for the first time in 30 unblemished years of teaching!) and, in a panic, had tried to cover up. This was obviously an especially upsetting experience for the child, involving not only a blow, but also a lie. When the facts had emerged and the principal had apologized personally to the child, Pamela remained unable to return. It then

came to light that she had had a previous history of intermittent school attendance and was living in the midst of a decompensating family situation. Only with psychiatric help to the family was Pamela enabled to return to school. It is instructive to note that a second child had been struck by the principal under similar circumstances that week, but he had been attending school without further difficulty.

DYNAMICS OF SYMPTOM FORMATION

School phobia is usually precipitated by some factor or factors that threaten the security of the child and his mother and increase their mutual dependency needs. Thus an illness which necessitated an absence from school, a move to a neighborhood strange to the family, or a transfer to a school about which the child has heard frightening tales may be the source of increased anxiety. Changes in the family situation, hospitalization of the mother, the arrival of a new baby, or marital turbulence between the parents, alone or together with a school incident, may lead to the appearance of phobic symptoms in a predisposed child. The sequence of events from this point will be determined in large part by the manner in which the child's anxiety is handled by his parents. With calm assurance and matter-of-fact recognition that school attendance is mandatory, he can usually be eased back into school. The further experience of confronting and overcoming his fears, in the presence of supportive parents, will then result in a diminution in his symptoms, particularly as he continues to enjoy the satisfactions of a normal school experience.

Unfortunately, the problem is usually not so resolved, for the very reason that the parents, immobilized by their own neurotic involvement, serve only to multiply the child's difficulty with separation. The mother of such a child is all too likely to seize upon his complaints of nervousness or fatigue as an adequate excuse for remaining at home. She may go through the verbal formula of reassurance, but in a strikingly unconvincing manner. She is too ready to agree that the teacher is too strict, the curriculum too demanding and the other children too rough. She thus cooperates with the child in displacing his fears from the nuclear family problem on to the school.

I have reported in greater detail elsewhere the prototypical interpersonal transactions between such parents and their children.[2] The essential psychologic mechanism is the provision to the child of *contradictory verbal and behavior cues* at one and the same time. The child may be urged to leave his mother's side, but she simultaneously tightens her grasp about him. He may be told he has nothing to fear by a father whose visible tremor indicates that some disaster lies in store. He may be "ordered" to go in a hesitant and wavering voice that lets the child know that the "order" need not—indeed, should not—be followed.

Complementary patterns of behavior may be observed by the physician in the course of his contacts with the family. The doctor will be "warned" in the child's presence that "he'll never go to your office alone with you"; as this is said, mother's tight hold on the child will guarantee the validity of the prediction. If the doctor suggests a plan for returning the child to school, it is likely to meet with the response: "Oh, but, Doctor, I can't stand to force him!" or "What do I do when the plan doesn't work?" This constant anticipation of failure is a not too subtle derivative of the mother's *need* to have the plan fail.

Observations of the behavior of mothers in a nursery school setting permitted validation of this concept of the parental role in the genesis of the symptoms:

On the first few days in the nursery the child might hover by his mother's side. As he began to display interest in the group and wander from his mother's side, she would almost invariably move in order to be closer to him. Or she would intrude herself in his activities on the guise of wiping his nose, taking him to the toilet, protecting him from a fight, and so forth. When the time for her departure was set, her anguish on leaving was often greater than the child's. Typically, she would return for several goodbyes. Her 2 hours away from school might be described as the hardest she had ever spent. On return, she would be overaffectionate, as though the absence had been one of 2 weeks rather than 2 hours. Several mothers were visibly perturbed to learn that their children had played happily in their absence.

Instances of overt sabotage of school plans by mothers were not infrequently encountered among these cases.

Stanley R., 15, was due to resume his school attendance. At the last moment his mother argued that it was raining too hard. When he persisted in his intention to follow through on his pledge, she suggested that his father be consulted. Called at his office, he insisted that Stanley go. At this point mother hung up the phone and told Stanley his father thought he should stay home.

Henry L., who had missed 6 weeks of school because of morning symptoms of nausea and vomiting, had been enabled to resume daily attendance through clinic efforts. After 2 weeks of faithful attendance his mother reported in passing at her next regular interview that he had been absent the previous 3 days because of a moderate snow. He lacked overshoes, she explained, and she had been concerned about his health. This might not have seemed too unreasonable, had we not learned from Henry that he had been permitted by his mother to be out sledding on those very 3 days!

Thus far the discussion has been focused on the modes of parental behavior which block the child's efforts to emancipate himself from pathological dependency. When the covert communication from mother is that of permission for gratifying egocentric wishes, the child exhibits behavior efficiently designed to secure his whims; the skill he displays is born of long experience; he is more able to manage his parents than they him. When the covert cue from mother betrays her own anxiety, fear or hostility, the child responds with anxiety or even panic. Not only is he threatened by the unwelcome message about mother's feelings toward him, but in addition he is afraid of his own hostile impulses which his

mother has proved ineffectual to check. What he seeks, above all, is a parent stronger than he, despite his railing against control; what he finds is an adult no more capable than he is of mastering his inner turmoil.

The child's behavior at the moment of separation is only partially understandable in terms of the immediate interpersonal transactions between his parents and himself. At a deeper level it is evident that *he cannot leave home because he is anxious about what may occur during his absence from the home.* At times this fear may be a realistic one. He may fear that his parents will separate or that his father will injure his mother.

Robert P. had a vexing school phobia over many months. Only after prolonged psychotherapeutic efforts was it discovered that he lived in constant dread that his divorced father might return home to kill his wife, as he had repeatedly threatened to and once attempted. (This important bit of history had been withheld by Mrs. P. until it was revealed by Robert.) When this came to light, Robert's therapist could discuss with him the external guarantees against this event and explore the complex inner feelings involved in it. Only then was Robert able to return to school.

With more or less justification, he may be afraid that a younger sibling, of whom he is jealous, will consolidate his favored position in the family during his own absence from the competition while at school.

Most often the fears of the phobic child are comprehensible as projections onto the outer world of socially forbidden wishes about which he has overwhelming guilt. The psychic structure of the young child is governed by a conviction of the magic omnipotence of thought. As he learns language, he gains a powerful tool in controlling the world; his verbal expressions order the events and the objects about him into a more understandable whole. His statements modify the behavior of the significant persons in his social world. Intoxicated by his new power, he passes through a stage of animistic thinking in which to name is to control, to think is to do. Gradually, too, he acquires consensually validated concepts and gives up his own egocentric world view. But this is available only for ideas that can be expressed and checked against the ideas of others. The feelings which a repressive environment may not tolerate may be denied access to correctional feedback and may continue in the shadowy world governed by magical thinking.

Thus the child whose security is threatened by a younger sibling may be unable to leave home lest something happen to that sibling. The apparent solicitude is an inverted psychic representation of angry feelings which, if not guarded against, will magically produce the feared (wished) injuries. The same dynamic mechanisms are operative in the frequently expressed concern about the welfare and safety of one or another parent. This should not be misunderstood as any real wish for harm to befall the person in question. Indeed, the child is, as his behavior shows him to be, strongly attached to this parent.

What distresses him is the psychic ghost of hostile feelings toward loved ones, normal in every child, but unmanageable in the phobic child because of the inability to tolerate the merest hint of such feelings as a grave transgression of the fundamental commandment that one honor one's parents.

The strength and duration of these factors, as well as accessory ones, which may run the full gamut of psychopathology, will determine the severity of the disorder. Chronic exposure to an anxiety-laden family environment that consistently inhibits growth toward independence will ultimately result in a neurotic inner structure with its own momentum. Reactions of withdrawal, regression and flight may become the inveterate modes of response to stress. The more extensive the intrinsic neurosis, the more intensive will be the psychiatric efforts required for its extinction and the substitution of more adequate patterns of behavior. In the early case, clearly responsive to the psychic fields of force that impinge upon the child, external management and support will usually suffice; the tearful infantile behavior customarily ceases on the threshold of the classroom. In the more severe one, however, the child may no longer be able to perceive his environment clearly, so distorting are the psychic forces swirling within him; extensive reconditioning is required before he can assimilate the class experience.

THE FAMILY ENVIRONMENT

A detailed account of the psychologic characteristics of the parents of phobic children is beyond the scope of this paper. The general statements that follow are offered solely as clues to the problems which may be relevant. No inference is intended that they are universally present; careful study of the individual case is necessary to identify the pertinent issues for the particular family. Summary descriptions unavoidably oversimplify and, to some extent, distort the subtleties of actual life situations. There is, however, some justification for the schematization of key themes recurrent in these families; the remarkable similarity of the findings of different investigators[1, 2, 3, 5–9, 11–13] indicates that the patterns of interaction within the family can be meaningfully related to the genesis of symptoms in the child. The papers by Waldfogel,[13] Talbott,[12] Klein[9] and Coolidge et al.[1] summarize the family patterns in substantial series of cases. The case analysis by Estes et al.,[3] written from a psychoanalytic orientation, exemplifies the psychologic features in a fairly typical family; this paper is noteworthy for a clever and incisive set of cartoons illustrative of crucial issues.

Cases of school phobia occur among families of widely varying socio-

economic class, religious affiliation and ethnic origin. In the overwhelming majority the parent principally involved in the separation anxiety of the child is the mother; this was true, for example, in 24 of the 26 cases I reported.[2] But this clearly implies a fault in the marital relationship as well, for the mother who is a partner in a mature and satisfying marriage is hardly likely to have such a symbiotic relationship with her child. If the discussion focuses on the mother, this should not be taken to exculpate the father; it merely reflects a psychiatric focus on the most effective point for the application of therapeutic leverage: the mother-child relationship.

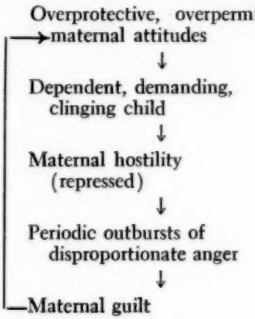
The mother of the phobic child is closely identified with her child; i.e., there is little psychologic distance between them. Both share a common perspective, almost a *folie-a-deux* that distorts the perceptions of each. The mother can be seen to relive vicariously through her child the unresolved problems of her own childhood. She is a person who has been trapped in a dependent relationship with her own mother. This is frequently part of a current problem with mother or mother-in-law and not merely a hangover from the past. She empathizes too readily with her anxious child because of her own anxieties; in the process she overreads and overreacts to his tensions. Several of Suttenfield's cases[11]—and two of my own—were instances of school phobia in successive generations.

The relationship with the child has been an unusually close one from the very beginning of infancy. This is not entirely a matter of overcompensation for hostile feelings, though this enters into every case to some extent, but is an expression of a strong primary emotional tie. I emphasize this point lest the genuine affection of the mother for her child be dismissed by overanalyzing the compensatory mechanisms; Waldfogel[13] has raised the same caution. It is rather the hostile feelings that are likely to be secondary as the mother becomes exasperated at her own helplessness in extricating herself from a symbiosis that both she and the child ultimately find suffocating. Each cherishes the intensity of the relationship; each resents the excessive dependency; neither can find a way out of the trap.

The pathologic strength of the attachment of mother to her child is expressed in an overprotective attitude. The dependency and infantilization this fosters bring in their wake constant demands from the child who has been blocked in developing means of satisfying his needs other than through mother. While at first seizing upon this dependence upon her as a symbol of intense love, the mother finds herself increasingly frustrated. Her own initiative and freedom of movement are restricted by a child who will not tolerate her leaving him. He disappoints her by failing to measure up to the achievements of more mature children of his age. She cannot accept her angry feelings

toward him, since they jeopardize her exalted image of devoted motherhood. The repressed resentment periodically explodes in anger disproportionate to the provoking incident. Laden with guilt at her hostility and even more at her unjustified outbursts, she returns to her overprotective and permissive position. The cycle then recapitulates itself as the child exploits her inability to set limits.

This may be represented in the following diagrammatic fashion:



The question remains: Why have the overprotective and oversolicitous attitudes that initiate the cycle developed in the first instance? Here the mechanisms may vary widely from case to case. The child may have been a late arrival after many years of sterility and frequent miscarriages; it is rare for such a child not to be surrounded by a great deal of apprehension. In another case the child may symbolize an earlier relationship of great significance to the mother.

Wendy Q. was conceived during the terminal illness of Mrs. Q's mother; she was born shortly after the grandmother died. In Mrs. Q's words: "She took my mother's place. I was never as close to my first child. She was my husband's, but Wendy was mine."

For a complex of reasons the mother may relive through a particular child her own childhood traumata.

Mrs. S. stated: "When Paul cried, I could remember how unhappy I had been as a child. I saw how lonely and frightened he looked in the classroom. I couldn't leave him there. My father never had any sympathy for my fears. When my husband punished Paul and said he was a baby, I felt so bad I was ready to leave him. Paul came to me for help. How could I, knowing how he felt, turn him away!"

Mr. R. had been victimized by a sadistic father who abandoned him early, but returned periodically with promises that were eagerly received and invariably led to further frustration. Mr. R. was determined that his son would have all those paternal attentions he had never had. By fathering Harry in the image of an all-giving parent, he was playing the roles of father and son by turns. So closely identified was he with the child that when Harry complained of nausea, Mr. R. would respond by vomiting.

When the child has been conceived as a tie for a failing marriage, he becomes a hostage who traps the parent in a relationship that may

be deeply resented. He has to be the source of those satisfactions normally derived from the marriage. As the only worth-while product of the union, he may be cherished and fondled to the point of seduction. At the same time he is resented as a further barrier to freedom.

Mrs. O. married a perennial bachelor some 15 years her senior. At the point of divorce she agreed to have a child. To her dismay, twins were born. Her inadequate husband was even less competent as a father. Now convinced that she should have left him, she was no longer capable of supporting herself and saw no escape from a frustrating existence. The twins were at once the objects of her love and her hatred. The latter sentiment was incompatible with her conception of motherhood and led to manifest behavior of complete submission of her needs to those of the children. She could only reassure herself that she loved them sufficiently when they gave proof of their "devotion" to her by becoming completely dependent upon her.

These few examples must suffice to indicate the complexity of the life patterns that may generate the symbiotic relationship with the child.

The role played by the father in the family drama is less well defined. With the exception of two cases, one of which, Mr. R., has already been cited, cases in which the fathers behaved like caricatures of anxious mothers, the complicity of the father is more frequently one of omission than commission. It is what he fails to do to sustain his wife; what he fails to provide his child; what he lacks as a mature man with whom a positive identification could occur that constitutes his share in the problem. Most commonly, he is uninvolved and has abandoned both parental roles to his wife. If he takes any part, it is likely that of a disgruntled and carping sideline critic.

Mr. S., with the skill of a prosecuting attorney, indicted his wife's failings with Richard. Intoxicated by self-satisfaction, he explained that he had warned her step by step of the inevitable consequences of her mismanagement of the child. With unpardonable pride, he reported that each of his dire predictions had come true. Richard used to obey when father did things his way—but father had stopped trying. His wife wouldn't listen, so why try? What stopped were the few constructive efforts he had made in earlier years; what remained were his acidly ironic comments on the futility of Mrs. S.'s actions. Badgered and bewildered, his immature wife, herself the sheltered baby of overindulgent parents, was reduced to a chronic state of anxious indecision.

The father may be angered, not only by his child's inability to carry on in adequate fashion at school and elsewhere, but as well by his resentment of the manifest preference displayed for the mother. The father frequently resents hearing about his wife's difficulties with the child on the grounds that he has enough to worry about at work. It is not unusual to find that he spends little time at home. The marriages, while under constant strain, are likely to be quite durable, since each partner serves certain neurotic needs of the other. A common source of stress is the father's relationship with his own family, resented bitterly by the wife for its closeness and exclusion of her as an outsider. He, on the other hand, cannot accept his wife's dependence on her family

and proves insensitive to her frequent pleas to him for help in altering the basis of this relationship. These centrifugal forces weaken the marital bond; the weakness of the marital bond itself leads each to need even more the family resented by the other.

Father's mode of response to the child's phobic symptoms is likely to be one of angry and unsympathetic dismissal. This threatens the insecure child, who turns to mother for "reassurance," the price for which is submission. Mother is then apt to side with the child and further widen the cleavage between him and father, who storms out of the situation. This sequence of events is by no means uniform, however. Father may be simply absent psychologically, hardly looking up over his morning paper. Or he may share his wife's anxieties and respond with helpless bewilderment. Rarely is he capable of taking decisive and effective action independently, although with psychiatric guidance he is more readily able to take over the situation than is his wife.

TREATMENT

Essential to the entire treatment process is *early return to school.* This may seem gratuitously self-evident; absence from school is, after all, the presenting complaint. It is nonetheless necessary to stress the point. All too frequently the physician shares, quite unwittingly, parental anxieties about the effect of pressure on the child. Moreover, valuable emphasis on etiologic understanding, techniques of uncovering, and the achievement of insight obscures at times the importance of symptom control, which may be contemptuously dismissed as "flight into health." There is no gainsaying the desirability of altering basic psychopathologic mechanisms if substantial and persisting improvement is to be achieved. But phobic symptoms are significant *in themselves,* not merely as symbolic manifestations of underlying neurotic conflicts.

The very existence of the phobic symptoms in this syndrome materially alters the patient's subsequent behavior. The phobic state denies him the experiences necessary for his growth and forces him into more intimate contact with the sources of his psychologic impasse. He fails to attend school, which he must for his own further social and intellectual development; he remains at home, a sullen captive to the mother from whom he must liberate himself. Mutual dissatisfaction with this frustrating state of affairs feeds the latent resentment of each toward the other; largely unexpressed, this chronic hostility fuels the fires that impel the overt neurotic mechanisms. The "success" of the child's anachronistic infantile behavior reinforces the probability of its recurrence, as it magically achieves its neurotic goals.

Superimposed upon the psychologic problems that have initiated the

phobic state are realistic secondary factors. The child falls behind in his school work so that now he is in danger of failing. It becomes progressively more difficult for him to rationalize his prolonged absence from school to classmates and teachers. The teacher herself is likely to become involved secondarily. She is apt to regard her inability to get the child into class and to keep him there as a failure on her part. If she is a focus of his fears, particularly if the parent blames her for strictness, unfairness, and so forth, it is difficult for her not to retaliate against the child, thus further complicating the problem.

The longer he remains at home, the harder does he find the task of leaving it. It is, after all, common experience that the barrier to the performance of a feared action increases directly with the delay in undertaking it. For the phobic patient his misperception of the situation upon which his anxieties are displaced becomes the more distorted the longer he denies himself the possibility of a corrective experience, which requires re-exposure. Indeed, the very persistence of the invalidism at home means to the child that what is feared is real; the paralysis of his family signifies their participation in the unspoken conspiracy to act as though the problem lay outside the home.

If the physician accepts the impasse and provides a medical certificate legalizing the absence from school, he, in essence, becomes a co-conspirator. The situation is rendered far too comfortable for all concerned by providing a home teacher. The symbiotic union is preserved with little sacrifice; mother and child may now avoid facing their anxieties without jeopardizing his academic progress. A great impetus for movement in treatment has been removed. This may somewhat overstate the case. It is not too far from the truth, however, as indicated by a recent study of children on home teaching in Baltimore. Eight of the 108 children receiving this service were certified as in need of it because of school phobia. *All had been out of school no less than one year, and one as long as three years* (J. B. Hardy: personal communication). This, it should be noted, does not represent a terminal state, but merely the course up to the present.

Klein[9] emphasizes the importance of getting the child into the school building, if only to the principal's office, to the counsellor or to the teacher after class for his homework. The key point is the development of measures which will serve to maintain some contact between child and school while a more fundamental reintegration is sought. At the same time the firm emphasis on the reality of compulsory school attendance helps to mobilize the anxiety necessary for psychotherapeutic progress. This action orientation of a psychoanalytic therapist has its theoretical justification in a modification of orthodox technique which Freud found necessary in analyzing phobias. According to Fenichel,[4] the analyst "must induce the (phobic) patient to

expose himself to the feared experiences for the purpose of bringing the full force of his neurotic conflict into the open." Lippman,[10] formerly an exponent of removing all pressure for attendance from the child, now agrees that the appropriate use of firmness in properly selected cases facilitates the therapeutic task.

The plan for resuming school attendance must be made in terms of the particular child, family and school. *From the outset the treatment effort is best conceived as a joint undertaking between medical and school personnel.* Thus a conference with school authorities is a fundamental part of the first stage of therapy. This provides an opportunity to clarify for the teacher and principal the dynamic motivation of the child's behavior. The recognition that the physician sees the causes of the difficulty as arising primarily from without the school diminishes the teacher's defensiveness and reduces unrealistic expectations of what she alone can accomplish. The school will then be enabled to play a more constructive role in rehabilitation. Instead of resenting the sting of parental criticism and moving to retaliate, often to the child's detriment, the principal can now see the parental behavior as part of a neurotic disorder toward which a therapeutic rather than a punitive response is appropriate.

The plan for resumption of school attendance, to be realistic, must take into account the severity both of the child's problem and of his mother's neurotic involvement. In the majority of instances it is not necessary to work out a plan for the return to school on a special part-time basis; once the family has been helped to understand the problem, effective guidance by the parents under psychiatric supervision will ensure prompt return on a normal basis of attendance. There will be cases, however, in which the tolerance for anxiety is so low that compromise plans will be more effective: getting homework from the teacher after class as a first step; beginning school return by spending an hour in the counsellor's office; having mother remain in the classroom or a nearby office for a specified period, and so on. Gradually the child is weaned from one step to the next. Such plans require a fully cooperative school and are not without hazard. Time limits are essential if movement is to occur. These dates should be set with the child exercising limited choice. Equally important is strict compliance with the contract by parents and school. Under no circumstances should mother, if she has promised to remain, try to slip out when the child's attention is diverted. This is likely to produce a severe exacerbation of anxiety and to jeopardize the success of treatment.

Two fundamental considerations should be made explicit to the child and his parents in the course of negotiating the plan for return to school: Attendance is mandatory under law; the child is capable of resuming his place in the community of his peers. The issue is not

whether he will return, but how and when. Let me caution against any misinterpretation of this therapeutic procedure. It is not a matter of relying on the threat of punishment; on the contrary, it focuses on the process of establishing controls. It is precisely the lack of inner control that gives rise to anxiety in the child who cannot master his upsurging impulses; the failure of his parents to stand fast and lend him strength results in the breakdown of function. The physician's confident expectation that the patient can accomplish the task of separation enhances the likelihood of its accomplishment, just as parental doubts had lessened it. By setting limits the therapist mobilizes the constructive elements in the patient; at the same time the limits provide a measure of the parental motivation for change.

So long as progress is perceptible toward the goal of return to school, the physician may properly intervene to lessen legal sanctions. But he must be alert lest "treatment" be converted into a sham formalism; it can be misused to perpetuate the symbiotic union by providing a technical excuse to bypass the school law requiring compulsory attendance. In several cases in which I was convinced that the child was ready to return, but the mother insufficiently motivated to follow through, I did not hesitate to inform the child and his parents that I was referring the matter back to the school for appropriate action. When the school authorities set a date for a juvenile court hearing, a prompt and complete return to school followed. It is clearly the physician's responsibility not to permit himself to be used in the service of illness if he is to meet his obligation to the patient and to the community.

It is at times difficult to persuade psychiatrists as well as pediatricians of the correctness of this stand. It is mistaken for the assumption of a judicial prerogative. This is not at all the case; compulsion resides, and properly so, in the laws of the community. The physician is merely removing himself from the untenable position in which he has been placed by the family. He is being used in order to declare the patient sick and therefore not appropriately subject to legal action, and to maintain the fiction that the patient is being treated. In the cases mentioned the child was not only not harmed by the legal process, but actually helped over a barrier to his maturation. In no instance in my experience in which I permitted the school law to be invoked has there been untoward psychologic consequence for the patient beyond transient turbulence which promptly subsided and was succeeded by more effective function. Obviously, it would not be appropriate for the severely disturbed child, whose school phobia is but one symptom of a total pattern of maladjustment. This emphasizes once again the importance of the initial diagnostic study.

When this material was presented at the 1957 Meeting of the Ameri-

can Psychiatric Association, the discussion offered by Dr. Norman Nixon, Director of the Child Study Center, Institute of the Pennsylvania Hospital, emphasized the importance of this therapeutic approach. With his kind permission, I quote the following excerpt from his remarks on that occasion:

In spite of this increased awareness of the problem (of school phobia), there still is much confusion about both the etiology and the treatment of school phobia. Our experience coincides with Dr. Eisenberg's and I am in complete agreement with his formulation. We also recommend that the children with school phobia who are referred to the Child Study Center be returned promptly to school following diagnostic evaluation as the first step in therapy. Unfortunately, many physicians . . . and that includes a number of psychiatrists who should know better, are still recommending the cautious handling of these children through their isolation at home on an indefinite medical excuse and a home teacher. While we see the same kinds of mother-child separation anxiety in our nursery school groups and younger school-age children, the problem is usually handled without too much difficulty. When the school-phobic child is in junior or senior high school, however, the problem is much more difficult. Yet it can be handled quite effectively in most instances, provided there is close coordination of the clinic's efforts with the school and, in some cases, the court.

It is this close coordination, however, that is difficult to attain unless the clinic, or the child's private physician, provides the leadership. Our procedure, once the diagnosis is made, is to hold a conference with the school counselor and the attendance officer. If the pediatrician or family doctor has been involved, he, too, is invited to the conference, especially if he has previously excused the child from attending school. At this time, we inform the school authorities that, in our opinion, the child is physically and psychologically able to attend school. This requires confirmation of our recommendation by the Chief of Medical Services of the Board of Education so that any previous excuses can be rescinded. The home teacher, if one had been assigned to this patient, is withdrawn.

Then follows a family conference attended by the patient and his parents and the clinic team (psychiatrist, social worker, psychologist and director of the Center). The school counselor and the attendance officer also are present to exemplify the unity of purpose of both school and clinic. Our clinical impressions are summarized and our recommendations for therapy for the child, as well as his parents, are presented. We assure the family that the child-patient is able to attend school and that we have found no reason, either physically or psychologically, why he cannot return immediately. Of course, the onus is placed on the law which says that every child of school age must be in school unless officially excused for illness. The school authorities at the conference then use the dynamic of authority. It is made clear that the child will return to school or the case will be referred to the magistrate. The clinic director emphasizes the child's (and the parent's) need for psychotherapy, but that his return to school is a prerequisite for beginning the therapeutic program.

In most cases, this procedure is successful in getting the child back in school. Here again, close cooperation is essential. During therapy, if the child does not appear in school, the counselor notifies the attendance officer immediately so that he can ascertain through direct contact with the home the day of the absence and whether it is excusable. A home visit sometimes is made and the clinic also is made aware of the situation in the event of absence, so that the family is confronted with a united front in their therapeutic sessions.

Of course, these are not easy cases to handle. Often, the pattern is of such long-standing that a long period of psychotherapy is essential. But psychotherapy alone, regardless of how intensive it is or how frequently the sessions are held, is not enough. It is the coordinated efforts of both clinic and school, together with the pediatrician or family physician, which are mandatory if the desired results are to be attained.

I have stressed the importance of a psychotherapeutic orientation toward early return to school because it is insufficiently appreciated; I do not mean thereby to imply that it is the be-all and end-all of treatment. There must be a concurrent program for the identification and correction of the neurotic components within family relations that have permitted the phobic state to crystallize and persevere. The child needs help in recognizing, expressing and accepting the conflicted feelings whose disguised derivatives cause him such anguish. His parents are just as urgently in need of insight into the sources of their neurotic interactions with each other and the child. At the outset of treatment they require a good deal of support to alleviate feelings of guilt and anger, and direct guidance in substituting constructive patterns of behavior. The duration and intensity of the required therapeutic program will vary with the severity of family pathology. The acute early case in the young child can be treated effectively by the pediatrician *if* he is sensitive to psychologic issues, *if* he is willing to take the necessary time, and *if* he is able to collaborate with the school social worker in a joint therapeutic effort. The more seriously disturbed child, particularly if he is in the older age group, is best referred promptly to the psychiatric clinic for treatment.

The main therapeutic problem the physician will encounter in dealing with the mother is the task of handling her *marked ambivalence.* In the psychotherapeutic situation this takes the form of simultaneous dependence on the therapist and hostile resistance to him. He is implored to tell her what to do to get out of the impasse with the child; at the same time his suggestions are subtly sabotaged and his successes resented. Any attachment the child forms to the therapist may be jealously regarded as an intrusion on her possessive "love" affair with the child. She is apt to seek the therapist's tacit approval in displacing responsibility onto the school and to be angered by his efforts to help her to examine her own involvement. She projects onto him her dissatisfactions with her husband, her child and her own parents.

This ambivalence is best understood as a cross-sectional sample of the forces whose longitudinal development has been outlined in an earlier section of this paper. The parent is motivated by contrary emotional drives, one of which is usually denied access to her awareness so that it manifests itself covertly in her actions. Side by side with the compelling urge to retain the child as a projection of herself is resentment of the constraint his dependence imposes on her own freedom. On the one hand, she takes sustenance from his need to be with her constantly, which counterfeit of love she takes for real love; on the other, she is dismayed by his immaturity and paralysis of function. She professes to be motivated solely by tender feelings; dimly perceiving her angry impulses, she is laden with guilt. The therapist is welcomed

as the agent who can help her regain health; he is feared as the person who will cost her the treasured closeness with her child.

If this amalgam of contradictory drives be understood, the therapist can avoid the error of mistaking the hostility for which he becomes the repository as directed at him personally—and of retaliating in a punitive manner. The mother's dependent needs require to be met in the initial stages of treatment without issuing any unrealistic promise of magical solutions. Only in the latter stages of therapy can they be interpreted. She must be prepared for the possibility that the child will act out his own angry feelings in a rather direct manner. The mother should be forewarned that this may be a byproduct of treatment and helped to understand that it should be no more than a transitory stage in the course of improvement. It requires to be met, with neither counterhostility nor supine acceptance, but rather with firmness tempered by understanding. If the mother is not prepared for this eventuality, she may respond to it by sudden withdrawal from treatment.

This oversimplified version of the dynamic forces at work is intended as a preliminary guide for the therapist. It should not occasion premature ex-cathedra "interpretation" to the child or parent before evidence has been secured for the relevance of these general expectancies to a particular family structure—and certainly not before the groundwork has been laid in treatment which will enable the patient to formulate these insights in native terms. It is not possible here to go further into the problems of treatment. The articles in the bibliography should be consulted for additional discussion.

It may be of interest to indicate the results that can be anticipated from this therapeutic program. I reviewed the records of 27 cases, 11 in nursery, 10 in elementary and six in junior high school and high school. Of the first group, all but one were able to adjust rapidly to a special nursery program;[2] the one child was withdrawn by her mother and lost to the study. Of the 10 elementary school children, all were able to return to school; only one has had a serious recurrence and is again in therapy. Results were far less satisfactory in the adolescent group. Two are attending school regularly; one is a therapeutic failure; the remaining three have been in and out of school and are still in need of treatment (after two years of intermittent therapy).

Talbott[12] reported on the outcome in 24 patients, 20 of whom were able to resume full attendance (two with remissions). Of the remaining four, one was able to go to school only so long as her mother remained with her in the classroom, two were not yet in school, and one moved out of the clinic area. Klein[9] indicated that seven of his 10 patients were back in school on a full-time basis; the other three were in treatment and were judged to be making progress toward the goal of return. Suttenfield[11] was able to help four of five children to resume

full attendance. The papers by Waldfogel[13] and Coolidge et al.[1] do not specify the statistics of outcome, but imply largely similar results. The outcome reported in the larger series in the recent literature is summarized in the following table, which probably understates the likelihood of improvement, since lost cases as well as those in which only partial progress had been obtained are categorized together with failures.

One final word as to treatment may be in order. It is frequently stated that the initiative for continuing treatment may be lost once the child has returned to school. In my own experience, only one of the

TABLE 5. *Outcome of Treatment in School Phobia as Reported in the Psychiatric Literature*

INVESTIGATOR	TOTAL NUMBER IN SERIES	FULL SCHOOL ATTENDANCE	PARTIAL OR TOTAL FAILURE
Talbott[12] (mixed group)	24	20	4
Klein[9] (mixed group)	10	7	3
Suttenfield[11]			
Elementary school	3	3	0
High school	2	1	1
Eisenberg[2]			
Nursery school	11	10	1
Elementary school	10	9	1
High school	6	2	4
Total	66	52	14

10 nursery, one of the nine elementary and neither of the two high school patients dropped out of treatment when return had been accomplished. Of six failures, all but two have continued to seek help, albeit inconsistently.

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THE MANAGEMENT OF MENTAL RETARDATION

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Mental retardation may be described as a condition of incomplete or impaired intellectual development which results in a lessened ability of the child to function in a manner commensurate with his age group. It is not a single disease entity, but is associated with a wide variety of conditions resulting from diverse etiologic factors. The degree of impairment, or retardation, shows great variability, ranging from nearly normal to grossly deficient capacity and functioning.

Of all the retarded children, nearly three fourths are only mildly retarded. These children can profit from specialized education, and many can be trained for competitive employment as adults. The moderately retarded child, while capable of special training for social living and self-care, probably cannot be expected to function in other than supervised or sheltered occupations. Severely retarded children, comprising the smallest percentage of all retardates, are capable of minimal achievement in self-care and will require close supervision throughout their lives.

SCOPE OF THE PROBLEM

The special problems posed by mentally retarded persons in our society have grown steadily in importance, particularly in the past

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century. While the mentally defective person was often recognized and dealt with in many earlier cultures and societies, it has been only in the past 50 years in parts of Europe and the United States that more scientific attempts have been made to deal with the particular needs of these persons and their families.

Traditional methods of servicing the mentally retarded were conceived in an era when they were regarded as public liabilities. Considered to be socially undesirable offspring of inferior parents, the retarded were deemed capable only of antisocial or immoral acts. Society, concerned primarily to guard and protect itself against the social costs of mental retardation, sought to solve the problem by expelling the retarded from the community and by segregating them from its established social institutions.

As a consequence of this philosophy of social control and exclusion, institutions were erected far from population centers. Those retarded children found attending public schools were segregated into "ungraded classes" or were denied schooling altogether. Professionals devoted considerable thought and effort to the problem of controlling the procreative abilities of the retarded, and parents sought to escape social scorn by closeting their children from the public eye. Thus the retarded were effectively severed and isolated from the mainstream of community life and professional consideration.

With subsequent advances in the medical and social sciences the capacities of the vast majority of the retarded for productive usefulness and social adaptation have been given greater recognition. These advances have also enabled professionals to apply new skills in habilitative and rehabilitative work with the retarded. These developments, coupled with the growth of organized parent interest, and the increasing inability of the institutions to cope with all the problems thrust upon them, have resulted in a shift of emphasis from segregation of the retarded from society to their differential integration into society.

There is evidence that as many as 3 per cent of the 0 to 18-year population are mentally retarded. This would indicate an estimated 5,000,000 retarded in our total population, of whom 1,500,000 are children. When we consider all the family members involved, as well as the retarded themselves, the enormity of the problem is apparent. The impact on the community is emphasized by the fact that only 150,000 persons, most of them severely retarded, are institutionalized. This leaves the majority of the retarded residing in our communities. Of those children who remain in the communities with their families, less than 130,000 are now attending special classes. Some are in regular classes, but usually behind their grade, and many are out of school, unacceptable to the school system.

EVALUATION

A comprehensive evaluation of the child's capacities and limitations is not only necessary for complete diagnosis, but also is the basis for

treatment planning and for the most effective use of special services and facilities such as counseling, education and rehabilitation.

The repeated clinical appraisals of the physician are of fundamental importance. However, he needs to use the psychological, social work and other professional disciplines of the team available in his community to ascertain the child's total condition, and to assist the parents in planning more meaningfully for the child's present and future care. The earlier the child's total condition is evaluated, the easier it is to prevent later difficulties and problems and the more hopeful one can be about developing his potentials.

Complete diagnostic and treatment services for the retarded child are still comparatively scarce. Many community clinics serving retarded children today are still principally for commitment purposes. Mental hygiene clinics, with some notable exceptions, tend to confine their services to the "emotionally disturbed" or intellectually normal child who has behavioral or other personality difficulties. "Crippled children" clinics have geared their services to the physically disabled child, and although many of them are broadening the scope of their coverage, they do not usually wish to service the mentally retarded child.

Differential Diagnosis

It is necessary to remember that conditions other than a primary deficiency of intellect may interfere with a child's ability to accumulate experience and to learn, and can, therefore, simulate mental retardation.

Impairments of vision and hearing, motor disabilities, chronic disease or recurrent illness may seriously limit the range of a child's experience and consequently his intellectual functioning. Late development of speech or motor activities may occur in the absence of mental retardation, even in children of superior intelligence. Failure to recognize such developmental lags can lead not only to an erroneous diagnosis of mental retardation, but also to the growth of feelings of inadequacy in the child, feelings which may further impair his intellectual performance. Diffuse brain damage, giving rise to hyperkinesis, distractibility and impulsivity, can interfere with learning even when there is no mental deficiency. Environmental factors may also hinder a child's intellectual development.

Probably the most difficult problems in differential diagnosis are those emotional disorders which simulate true mental retardation.

As we give more careful psychiatric evaluation to patients referred as retarded, some will be found suffering from primary emotional disorders. Before the last few years, childhood schizophrenia and infantile autism were more often misdiagnosed as mental retardation. Although *childhood schizophrenia* (see also p. 699) was originally described as

a condition which followed a period of normal development, it now appears that careful history taking will often reveal evidence of atypical behavior from birth. Frequently there is a history of seriously disturbed sleep in the first year of life. Later the disease is recognized chiefly by a triad of findings: (1) disturbance of motility (bizarre patterns of movement, impulsive and unpredictable motor activity), (2) disturbance of speech (echolalia, bizarre associations, neologisms), and (3) pronounced and prolonged withdrawal of interest from the external world. The schizophrenic child, while he may appear mentally retarded and may score in the retarded range on intellectual testing, often has a pattern of intellectual performance which is strikingly irregular and, in certain areas, superior.

Another condition, probably a form of early childhood schizophrenia, which can be a problem in the differential diagnosis of retardation is *primary infantile autism* (see also p. 711). This is manifest as early as the first year of life by extreme withdrawal and desire for the preservation of sameness. These children are often described by parents as having been always resistive to handling and physical contact. Many of them, when seen for examination at three or four years, are functioning on an idiot level. They may be mute, incontinent and helpless, and yet have an intelligent facial appearance. They, like other schizophrenic children, may show superior ability in certain areas.

In addition to these major psychoses, we must consider in differential diagnosis children who function below their true intellectual capacity because of emotional problems and conflicts. A group of children who would fall into this category are those who have suffered early, severe and prolonged *emotional deprivation*, such as might occur in prolonged institutionalization during the earliest years of life. The profound effects that such deprivation can have on the physical, intellectual and emotional development of the child are now well recognized. Characteristically, children who suffer prolonged emotional starvation in the first five years of life can show retarded intellectual development, an incapacity for forming deep emotional attachments, and a relative lack of moral sense.

Severe *inhibitions of learning* such as might lead to an erroneous diagnosis of mental retardation rarely result from emotional stresses occurring in later stages of childhood. They are a reaction either to environmental factors or to internal neurotic factors. Children who are intensely fearful of, hostile to or dependent upon parents or other authority figures may be unable to learn effectively. Likewise, those with neurotic perfectionistic needs or profound feelings of inadequacy may be unable to achieve up to their true potential. Careful clinical appraisal and psychologic testing will usually distinguish the major psychoses and psychologic problems from true mental retardation.

Psychologic Evaluation

Although psychometric tests do have a definite value in the examination, they may be used without judgment and consequently at times do positive harm. It is certainly unwise to make a diagnosis on the basis of a single test result. These points of caution may well be emphasized:

1. The tests give only an approximate measure of the child's performance at a particular time and in terms of comparison with others. Great caution must be used in interpreting the results of tests without evidence from the child's everyday behavior for corroboration.

2. Any test is made to measure, however inadequately, only one thing, and must not be held responsible if it does not measure everything. Most of the tests about which we are concerned are measures of so-called general intelligence. They are useful only as indicators of the kind and degree of ability that a child exhibits. Too often, untrained or partly trained examiners are apt to regard the intelligence test results as the best and final picture of a child's behavior.

3. In spite of attempts to make all tests objective, whenever one person is questioning another, inevitably subjective factors enter into the picture. Usually these factors operate to reduce the scores. The personal manner and attitude of the examiner, the subject's physical and mental condition, disturbing stimuli in the physical environment, interruptions during the examination, inadequate preparation of the examiner, language and cultural differences of the subject—all may operate to reduce the child's performance record.

The psychologic data should include, in addition to all pertinent identifying data and test behavior, an analysis of the subject's mode of intellectual functioning; analysis of his special abilities and aptitudes; analysis of his general personality structure; emotional stability and integration; affect; basic conscious and unconscious motivation; attitudes toward himself, peers, family members, other persons and social institutions; methods of achieving satisfactions and dealing with normal life situations; level of aspirations; interpersonal relations, sexual attitudes and relationships; susceptibility to and modes of reacting to stress; basic conflicts and anxieties; personality shortcomings and aberrations; pathologic symptoms; main personality defenses and controlling tendencies, rigidities and excesses, degrees and types of insight into main problems; psychodynamics of the behavior. After this the psychological examination should conclude with an integrative summary, diagnostic impression, diagnosis and recommendations which are meaningful to the physician.

Social Work Evaluation

In the total evaluation of the retarded child we are concerned not only with an assessment of the child's biological equipment, but also

with an analysis of his functioning as a human being in a particular family, neighborhood and community context.

The social worker, through a study and analysis of these social factors as they have operated historically as well as currently, points out the ways in which these forces, along with the biological, have conditioned the kind and extent of the child's mental handicap and molded his existence as a social being.

The retarded child must be viewed as an integral part of the family group and as having distinct relationships to its members. The child, the parents and the siblings mutually influence one another's functioning and contribute their respective influence to the dynamics of the family unit's functioning as well.

The impact the retarded child had upon the members of the family and their interrelationships is in turn reflected in their responses to the child. Coexistent with this, each family, on a consciously planned basis or perhaps more haphazardly, attempts to weigh and balance the needs of other family members, and is subject to all the varied daily stresses and strains which affect all of us in these times. In addition to creating new difficulties for the family, the consequences of a retarded child in a family group can sometimes exacerbate latent or uncompletely resolved interpersonal difficulties or plunge the "marginally stable" family (or family member) down the road to partial or complete disorganization.

The family's reactions are also conditioned by larger community attitudes toward their child and toward them as bearers of a retarded child.

These latter forces, not directly visible as such, exert their influences nevertheless largely through the family unit and secondarily in terms of the socially sanctioned institutions such as schools, courts and health and social agencies. Intermingled with this are the attitudes and notions of professional persons with whom the family and child have had contact in their search for aid, counsel and direction. The physician will find the social work evaluation valuable in planning for the child and family in their community.

Speech Evaluation

The majority of mentally retarded children will require language and speech therapy, since intellect and the development of language and speech are closely related. The speech therapist provides a detailed evaluation of the speech level at which the retarded child is functioning and outlines a specific program suited to his needs.

Some of the factors taken into consideration during the examination are visual perception, auditory perception, ability to focus, ability to

suck, chew, blow, swallow, condition of the articulators, neuromuscular functioning, measured mental ability, social maturity, attention span, and family attitudes toward the problem. Appropriate testing materials aid in giving a complete picture of the child's ability.

Education Evaluation

Mentally retarded children are entitled to the kind of education and training which will enable them to contribute to society and to themselves, in accordance with their capacities. To meet this aim, after the complete work-up, the educational consultants assess every child in terms of present and future educational needs, and attempt to see that the children are given the advantage of all available educational opportunities. The educator works closely with allied services in formulating the educational status, disability, and specific recommendations for a long-range educational program.

Orthopedic Evaluation

The incidence of orthopedic disabilities in mentally retarded children is higher than in the normal population. In addition to the common orthopedic conditions of a particular age group, there are the added disturbances associated with cerebral palsy and other central neurological disturbances which affect the locomotor faculties of the body.

The orthopedic evaluation consists in a careful inspection of the child's physical capacity to walk and perform activities demanded by the average daily routine such as stair climbing, dressing, and so on. Detailed muscle testing as well as musculoskeletal examination for contractures and deformities follows. The most commonly used diagnostic aid is x-ray examination with electromyographic, neurological and special laboratory testing performed as indicated.

Dental Evaluation

The dentist plays an important and often overlooked role on the medical team in the over-all management of the retarded child, since pathologic oral conditions may have a deleterious effect on the retarded child's medical and psychological well-being. It is not always possible to do a thorough examination on retarded children because of lack of cooperation. All the problems in the handling of normal children in dentistry are greatly magnified in the retarded, e.g., aggression, fear and resistance. When necessary, a thorough examination can be made under general anesthesia.

Laboratory Tests

Special tests should be used only as they may aid in the diagnosis and treatment of the individual child. For example, protein-bound iodine is valuable for suspected cretinism. Roentgenograms of the skull may reveal old fractures, intracranial calcification, craniostenosis, abnormal markings, and the like. Air studies such as pneumoencephalogram or ventriculogram are indicated occasionally. Electroencephalograms are often helpful, particularly for children with associated convulsive disorders. Subdural taps are indicated for suspected subdural hematoma.

It has been suggested that routine screening tests for phenylketonuria be done on all young infants, since early treatment with phenylalanine-restricted diets is "of the essence." Ten per cent ferric chloride may be added to the wet diaper, or 5 per cent ferric chloride to fresh acidified urine in a test tube. A dark green color indicates a positive reaction. Positive reactions should be verified by other tests, i.e., phenylhydrazine urine test, phenylalanine blood level determinations. Falsely-positive reactions with ferric chloride may be observed from salicylates, diacetic acid, bile, pyruvic acid, homogentisic acid, catecholamines, and after chlorpromazine medication.

COMPREHENSIVE DIAGNOSIS

Functioning of the Child

This should include intellectual, emotional, social, speech, and such other pertinent appraisals as motor, sensory, visual and hearing handicaps.

Classification

The diagnostic possibilities should be considered under the following scheme:

I. Pathologic classification
  A. Primary cerebrocranial developmental defects
    1. Cerebral malformations, e.g., cerebral agenesis, cerebral hypoplasia and cerebral hyperplasia (macrocephaly)
    2. Cranial defects, e.g., craniostenosis and hypertelorism
    3. Congenital ectodermoses, e.g., tuberous sclerosis, cerebral angiomatosis (Sturge-Weber syndrome) and neurofibromatosis
    4. Mongolism
    5. Familial defect (defective or inferior intelligence in one or both parents and in other siblings)
    6. Undifferentiated cerebrocranial defect (primary amentia) (As our knowledge of cerebral physiology and pathology increases, the number of cases placed in this last category will decline)

B. Secondary cerebral malformations
   1. Porencephaly, e.g., from trauma
   2. Hydrocephalus, e.g., from congenital anomalies of the central nervous system, intracranial hemorrhage associated with birth trauma or anoxia, infection or neoplasm

C. Central nervous system abnormalities associated with metabolic defects
   1. Phenylpyruvic oligophrenia
   2. Galactosemia
   3. Cretinism (congenital hypothyroidism)
   4. Gargoylism (Hurler's syndrome, dysostosis multiplex)
   5. Hepatolenticular degeneration (Wilson's disease)
   6. Reticuloendothelioses, e.g., Gaucher's, Neumann-Pick

D. Acquired focal or disseminated central nervous system lesions
   1. Post-toxic and infection, e.g., lead encephalopathy, viral encephalitis, kernicterus
   2. Post-traumatic lesions
   3. Posthypoxic

E. Degenerative disorders of the central nervous system
   1. Cerebromacular degeneration (Tay-Sachs disease, amaurotic familial idiocy)
   2. Demyelinating encephalopathies

F. Functional mental retardation (pseudoretardation)—these conditions have been discussed under differential diagnosis, e.g., psychoses

II. Etiologic classification

A. Prenatal factors
   1. Hereditary, e.g., familial, cerebral sclerosis, craniostenosis
   2. Acquired in utero, e.g., infection (rubella), anoxia, hemorrhage, iso-immunization, endocrine, roentgen-ray irradiation

B. Natal factors
   1. Anoxia and hemorrhage
   2. Birth trauma

C. Postnatal factors
   1. Trauma, e.g., accidental skull fracture
   2. Infections, e.g., meningitis, encephalitis
   3. Toxic, e.g., lead, arsenic, coal tar derivatives
   4. Vascular accidents, e.g., congenital aneurysms, cerebrovascular thrombosis
   5. Anoxia, e.g., carbon monoxide
   6. Neoplasm

The comprehensive evaluation and diagnosis of the child's capacities and limitations are essential to treatment planning. In order to make the most effective use of special facilities and services, such as counseling, education and rehabilitation, parents have to understand their child's condition in detail. The parents can then help as in preparing a meaningful plan for the child's present and future care.

INFORMING THE PARENT

After a thorough evaluation of the retarded child the parents must be given an interpretation of the diagnosis and findings in as clear and detailed a way as possible, but with sensitivity for their feelings. The difficult struggle that many parents experience in gaining an understanding of their child's handicap, their daily problems in living with him, and their ability to contribute to his well-being are greatly in-

fluenced by the kind of professional counsel they receive at this time. The facts should be given frankly and honestly, but without brusqueness or brutality. False reassurances about the child's normality and vagueness in giving information only compound the parents' perplexity and anxiety. But one can give accurate information and yet avoid offensive words (e.g., idiot, moron), and one can try to allay the parents' shock and disappointment by giving a total picture, the child's assets and capabilities as well as his deficiencies. One can also attempt to relieve parents' tendency to blame themselves for the child's condition as well as their fears about future pregnancies (if the condition is not hereditary). Recommendations, based on incomplete or inaccurate diagnostic evaluation, can hamper rather than aid the child's development and create or aggravate emotional or behavioral problems. Recommendations which parents are unready or unable to accept are approached carefully. Even when institutionalization may be an imminent necessity, the physician must anticipate the parents' likely resistance, present the facts about the child's condition and prognosis as well as about institutional care and then allow the parents to make their own decision in their own time.

The attitude of the physician, his willingness to give time, understanding and attention to the parents and his assurance of continued interest and acceptance of responsibility are essentials that cannot be overstressed. Physicians' inadequacies in informing and dealing with the parents of retardates are in part responsible for their often going from doctor to doctor over a period of years.

TREATMENT

Only in rare instances can conditions causing mental retardation be expected to respond to medical or surgical treatment. The treatment of the retarded child is directed toward helping him to attain his maximal physical and intellectual development, to live as satisfying a life as possible, and to have as little conflict as possible with his environment. This requires the coordinated efforts of professional workers in various fields (physicians, social workers, clinical psychologists, educators, speech therapists, psychiatrists and others). The treatment of the child as a whole requires careful attention to his special educational and vocational needs, to his emotional health and that of his parents, and to his physical health. For the retarded child who is multiply handicapped, careful medical control is particularly important. Many of these treatment methods and techniques may have to be used with some children over a long period of their lives, or resumed at critical stages. The job of the physician in such instances is to initiate these "therapies," to continue them as long as they are appropriate, to make

referrals when indicated, and to maintain contact with the child and his family.

Parent Guidance

This is one of the most important parts of management of the retarded child. The family must be oriented to his needs, his potentialities and his limitations, and they then can help most intelligently in carrying out the various aspects of the treatment plan, e.g., education, speech.

The groundwork for successful guidance is often laid down in early diagnostic contact through the calm and friendly acceptance of the child by the examiner. In the "informing interview" we have already emphasized the avoidance of "labeling" and that the interpreting diagnosis should be elaborated clearly and with sensitivity for the parents' feelings. Answering the many questions straightforwardly and without evasions or hedging does much to dispel the confusion and anxiety all parents feel, and can lay the basis for a healthier and more realistic understanding of the child's problems.

Accurate diagnostic conclusions are basic to a skilled interpretation of the child's limitations and capacities. An incorrect diagnostic evaluation can lead to recommendations that may hamper the retardate's already difficult development or compound a serious behavioral disturbance.

In guidance work parents themselves can and should be encouraged to use their own resources and ingenuity to stimulate in the child greater self-care and increased self-reliance. This can often be done by focusing attention upon the everyday problems of feeding, dressing, toilet care, traveling and the like. Habit training and the setting up of routines for these self-care activities are to be stressed. The child needs to be encouraged and stimulated appropriately and should not be left to his own devices. These attributes are learned skills developed socially as the child attempts to deal with and master the problems presented to him. These tasks should be appropriate to the child's age and to the severity of the defect, and not beyond what he can accomplish.

It is now clear that institutionalization is not a solution to all the problems of all retarded children. Nor is it always the best type of care for even the more severely handicapped child. The desire of parents to keep their retarded child at home is certainly not a new phenomenon, nor is it inconsistent, generally, with what is best for the child himself. Although it was once deemed socially desirable and necessary to isolate and exclude the retarded child from family and community life, we are now becoming more aware of the many serious shortcomings of this (or any other) unilateral approach to the varied needs and prob-

lems of the mentally retarded in our society. Indeed, the antiquated and outdated assumptions that buttressed this philosophy stemmed as much out of society's ignorance and fear of the retarded as it did out of a deep humanitarian concern for their welfare.

Giving the parents some opportunity to ventilate their concerns and perplexities, providing an atmosphere of acceptance and parcelling out information in tactful, digestible doses in a sympathetic fashion, coupled with periodic appraisals of the child's development, will enable the parent and the physician to join forces and combine their mutually important efforts for the greatest good of the child. In more difficult cases individual and group counseling is a valuable adjunctive service when performed by professional persons with special training in this area.

Education

Education for the mentally retarded is based on the same principles of child development and mental hygiene as education for the non-retarded. But it is important that teachers recognize the uniqueness of these children, their personal traits, feelings and attitudes, their disabilities and their abilities. Also, it is part of the teacher's responsibility to help the parent toward an understanding and an acceptance of such a child's limitations and potentialities.

Mentally retarded children require the opportunity to experiment with their environment. Therein lies the first educational opportunity for the retarded child, through his most important teachers—his father and mother. The early years of the handicapped child's life must be filled with vital experiences.

In any educational program for the retarded, provision must be made for physical development and for satisfactory release of energy in activities. This is particularly important for the physician to bear in mind, since the mentally retarded patient may be normal or nearly so in physical prowess.

The retarded child must learn through daily experience on a concrete level. He must be guided carefully to learning situations that develop specific knowledges, skills, attitudes and habits as these apply to real life situations. Opportunities should be given for personal and social developmental experiences that are stimulating and supplement the child's home life. He must learn to accept the demands of society and make an effort to accomplish tasks within his ability with self-respect and confidence.

Home-care programs for mentally retarded children who are not able to go to school satisfactorily at an early age would pay dividends in a later population in and out of institutions. Even though these patients

were unable to function outside the home or a sheltered environment, they could contribute some share of simple work to the family unit of the institution in which they are housed.

A home training-program has been found useful for those retarded children who are to remain at home or are in a state of preparation for schooling. Such a program covers specific activities in toilet training, shopping, listening, playing and language. The objectives of such a program give the child specific obtainable goals; the physician has an additional evaluation tool toward planning a program for the child and possible future school placement; parents achieve a more realistic and sound approach in the management of the child.

In discussing an educational plan with parents or others it is wise to remember that 75 per cent of the total number of mentally retarded children can attain a mental age of the average child of eight to 12 years (I.Q., 50 to 75). These children can usually benefit from training in the special classes which in most communities are provided by the public school system. As a result of special class training, plus careful home preparation for school and realistic guidance, the majority of these children can become vocationally self-directing, useful citizens.

Children with intelligence quotients ranging approximately from 25 to 50 or a mental age from three to about eight years also can benefit from training in self-help and social skills. Almost all, with good training, can be made capable of partial self-direction with supervision at home, in a sheltered workshop situation, in the community or, in some cases, in an institution.

About 3 to 5 per cent of the total number of the mentally retarded, the severely afflicted, can be expected to reach adulthood with a mental age of less than three years (I.Q. below 25). Some of these will not even be able to acquire such skills as self-feeding or elimination and will require custodial care.

Psychiatric Therapy

The rather high incidence of emotional disturbances in retarded children is usually not a result of brain damage, but rather of improper management. As has been emphasized, many such disturbances can be prevented by careful early evaluation of the child and proper planning. It cannot be stressed enough that the parent of the retarded child should have, as far as possible, concrete and detailed advice about the child's potentialities and how to help him realize them. Good emotional hygiene means that the family and the general environment should provide love, acceptance and approval, should not pressure the child beyond his capacity, and yet should not be overprotective.

It is assumed in the giving of advice on management that those car-

ing for the child are capable of following the advice. If they, because of their own emotional problems, are incapable of following the advice, behavior and emotional disturbances may be expected in the child. The proper handling of such disturbances will usually demand psychotherapeutic intervention with the parents and possibly with the child. In general, one should not expect improvement in the child unless the parents' own emotional difficulties are brought under some control. When necessary, many retarded children, in spite of their intellectual deficit, can be treated by psychotherapists who have special training in the field of retardation. Other services, such as speech therapy, remedial education, social work, are often psychotherapeutic.

Social Work Facilities

While mentally retarded children can be products of normally stable, well-knit and resourceful families, they may also be part of families beset by a variety of social, economic, interpersonal and other types of problems, or the advent of a retarded child for some families may exacerbate problems in these areas for them. Often the kind and effect of these concurrent social or interpersonal problems may seriously hamper the healthy development and adjustment of the retarded child and may require forms of services and assistance beyond the abilities of the physician or clinic to perform.

Each community has a network of social agencies, voluntary as well as public, which provides a great variety of services to eligible families which can ameliorate problems stemming from inadequate economic, social or emotional resources in families. By enlisting the assistance of agencies providing financial, recreational, counseling, foster home, homemaker and other social services, these concurrent social problems may be resolved, and thereby enable the parents to care more adequately for the retarded child. Sometimes it is not possible to provide successful services to the child himself until these problems are resolved, but more often than not the two processes may complement one another if they are dovetailed.

Speech Therapy

If the child is in need of speech therapy, a half-hour individual session three times weekly has proved to be an effective therapy schedule. Emphasis should be placed on language training, since it is in this area that retarded children have most of their difficulty. Each retarded child presents a unique problem and therefore must be trained by methods which take into account the etiology of his retardation.

The mother of each child, or the person with whom the child seems to have the best relationship, should be given detailed instructions for

the purpose of continuing the intensive therapy sessions at home. A blank notebook is provided for each child in which the mother is asked to record notes concerning the child's speech, his interest in the environment, his attention to books, or any element in the child's behavior which has not been observed previously. In addition, the mother is given suggestions for motivating the child so that he will use some of his newly acquired language and speech.

Some of the children seem to profit more from group sessions rather than from individual therapy sessions, but this is possible only when some language and speech has already developed, and when it is felt that reinforcement of these abilities will result from group interaction.

As a result of language and speech therapy, almost all retarded children show some improvement, not only in speech, but also in all areas in which they are retarded.

Medical and Surgical Treatment

The greatest contribution that medicine can make in the field of mental retardation is toward prevention of the prenatal, natal and postnatal causes. Medication is largely nonspecific. However, there are several entities which can be medically treated in a specific manner. For example: (1) Phenylpyruvic oligophrenia is a rare familial type of mental retardation, usually found in well developed, blond, blue-eyed children with eczema, and is due to an enzymatic defect in the liver resulting in failure to convert phenylalanine to tyrosine. The diagnostic tests in the urine and blood have been previously mentioned. Early treatment during infancy with a phenylalanine-low diet is of value. After the age of three to four years this therapy may not be effective. (2) Galactosemia is a congenital enzymatic defect in the metabolism of lactose which produces a typical clinical syndrome with onset in the neonatal period. There may be failure to gain weight, hepatomegaly and jaundice, cataracts, mental retardation, albuminuria, galactosuria and an abnormal galactose tolerance curve. If institution of a lactose-free diet is begun before irreversible liver damage has occurred, the prognosis is good.

Early surgical intervention, preferably before six years of age, is indicated in craniostenosis. The diagnosis is made on x-ray examination of the skull, which shows premature closure of the sutures. Craniectomy with insertion of polyethylene film relieves the cerebral compression and results in a good prognosis. Operation is also indicated for subdural hematoma.

Orthopedic, ophthalmological, dental and other services should correct defects whenever possible.

Medication is helpful in treating the behavior disturbances and hyperactivity often associated with mental retardation. These drugs include Reserpine, Thorazine, Benadryl, Nostyn, Dramamine, Dexedrine

and Trilafon. Their individual efficacy cannot be predicted, but can be determined only by trial. The necessary dosage to produce the desired result is often larger than with normal children. When these drugs are effective, they permit easier training and education and simultaneous increase in attention span.

Drugs indicated in the treatment of the convulsive disorders which may be associated with mental retardation include phenobarbital, Dilantin, Gemonil, Mesantoin, Mysoline, Tridione, Paradione, Mebaral, Phenurone and bromides. When single drugs are ineffective, combinations of drugs should be tried. Unusual results are sometimes encountered in our retarded children. For example, Dilantin and phenobarbital, which are usually effective for idiopathic grand mal seizures, may not be as effective as the drugs usually given for petit mal, such as Tridione. The dosage necessary to produce the desired result is often larger for retarded children than for normal children.

The usual attention to good nutritional care, prevention and early treatment of infections is, of course, just as applicable to the retardate as to the normal child.

PROGNOSIS

It has already been indicated that the majority of retarded children can, with comprehensive care and specialized training and education, become more or less independent and employable in a variety of uncomplicated jobs. Time, new attitudes and new understanding certainly will increase the number of services for retardates as well as the degree of acceptance that communities extend to them.

It is now generally agreed that an institution is seldom, if ever, a completely satisfying place for the rearing of any child. Where home care is impossible, custodial facilities are being developed in which an attempt is made to duplicate the emotional atmosphere of the home. The future will certainly see more patients trained in a community setting. Training programs for those patients who must be placed in insitutions will be directed toward preparing the child for possible future return to the community.

The discovery of mental retardation earlier in life will lead to proper educational placement when the child starts in school and should thereby prevent the traumatic effects on the retardate of competition and failure in a class for normal children.

CONCLUSION

Mental retardation, produced by a wide variety of conditions, is a major medical, social and mental health problem. Although there is

little in the way of specific therapy for this condition, careful and comprehensive evaluation and management of the retarded child can produce gratifying results in terms of the retardate's achievement and adjustment, as well as his family's and society's acceptance of him. What can be accomplished is often in proportion to the availability of a complex of facilities for evaluation and management. The physician has a direct responsibility to take a leading part in the team management of the retarded child.

Ultimately, the answer to the problem of mental retardation lies in its prevention. This can be achieved only by basic and applied research into prenatal, natal and postnatal causes of retardation.

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BEHAVIORAL SYNDROME ASSOCIATED WITH BRAIN DAMAGE IN CHILDREN

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The behavior of a child with brain damage is not only a function of the biologic damage itself, but is also dependent upon the child's psychological defense patterns and upon the environmental forces acting upon him. The biologic defect in turn, however, influences the child's psychologic structure, its maturation, its gratifications and defense patterns, so that we are in effect dealing with a reciprocal interaction of biological, psychological and evironmental forces, all of which need evaluation in understanding the child's behavior. The clinging behavior of a child with equilibrium problems, for example, is not simply a function of balance. The clinging has its onset in a biologic defect, be it in vestibular, cerebellar, corticospinal or extrapyramidal functioning, but this in turn causes an interference with the normal acquisition of posture and independent motor ability; anxiety on disturbance of equilibrium; motor and then psychological difficulty in actually reaching out, in investigating and in relating to objects in the environment; with resulting frustration in the child and in his parents, with inhibition, withdrawal and clinging by the child. From the point of view of behavior, then, the biologic defect is not an isolated phenomenon, but influences and is in turn influenced by psychological and environmental factors.

To understand the behavior of an individual patient, therefore, it is important to know not only the location, severity and pathogenesis of the organic disease, but also what the patient has brought to the disease. That is: What maturational progress, physically and psychologically, did he make before the disease hit, what is his native intelligence, what environmental support does he receive? In general the earlier on the

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developmental curve the biologic defect occurs, the greater the potential psychologic defect and behavior disturbance. Prenatal, paranatal and neonatal defects, whether of developmental, traumatic, anoxic or infectious etiology, have potentially the greatest influence upon subsequent development and upon the resulting behavior pattern.[21, 22] Fully 20 per cent of all children seen in the Bellevue Hospital Mental Hygiene Clinic suffer from organic defects incurred during prenatal, paranatal or neonatal life. These children are brought to us primarily for behavior difficulty. In them there is no gross neurological defect, and classic neurological examination in terms of tendon reflexes, cerebellar signs, cranial nerves and gross sensory examination gives essentially normal results.

The biological defect, however, puts its stamp in three areas: (1) The pattern of normal maturation is interrupted so that there may be (*a*) retention of primitive patterns and/or (*b*) delay in the acquisition of new functions and abilities. This means that at any given moment, behavior patterns characteristic of varying ages may be seen in the child, and that in the midst of essentially normal function there may be an island of retardation. It is important to note that perceptual areas as well as motor may be affected. (2) There is interference with initiation and control of impulses. This may occur at varying levels; at the level of the motor neuron, in patterned behavior or in abstract thinking; and may take the form of an increase or decrease in impulses, with an inhibited picture with too few or blocked impulses, or one in which it seems as though impulses are uncontrollable, pouring into action without normal inhibition or restraint. (3) There is a basic "predisposition to anxiety" (Greenacre[15]). These children are more vulnerable to the physiological and psychological stresses of living. They react with an increased anxiety, and the picture they present is, in part, an effort to cope with this anxiety.

From a practical point of view these problems may be observed in (*a*) motor performance in patterned and reflex behavior, (*b*) perception, (*c*) in the reaction to these problems and in the management of anxiety.[2, 27, 28]

MOTOR PERFORMANCE

General Kinetic Pattern

As suggested above, the organic child may be inhibited and hypokinetic or uncontrolled and hyperkinetic. The hyperkinetic child, because of the difficulty in managing him, is generally brought for psychiatric help at a relatively early age, in the preschool years. Even up to the age of six or eight he is in constant motion, restlessly seeking, grasping, investigating; opening drawers, examining toys with an

urgency, quickly darting from one object to the other. The preschool child will combine all sensory modalities in his exploration with much oral activity—sucking, chewing and even devouring objects in the environment. The older child may be unable to sit still in school or at home. He also is restless, and even when his attention can be caught, there is some telltale motor activity, a constant movement. This hyperkinetic, distractible child with poor concentration and short attention span was initially described as a sequel to epidemic encephalitis.[3] Kahn and Cohen[18] describe the syndrome of the "brain-driven" child as due to "defective brain stem organization," and their description includes inability to maintain quiet attitudes, praxic difficulty, clumsiness and choreiform or myoclonic movement.

On reviewing the history of the hyperkinetic children seen in the Bellevue Hospital Mental Hygiene Clinic we are impressed that their hyperkinesis became evident within a month following birth; the child is described as being in constant motion with increase in drive. Gross motor development may or may not be delayed. Rhythmic activity in the form of rocking, swaying movements, bed rolling, swaying from one foot to another, chair rocking, in the preschool child is usually present. The hyperkinesis appears to have its origin in difficulty with impulse control, a lack of check with impulses flooding the motor neuron.[17] If, for example, the child is told to inhibit a specific motor act once it is initiated, e.g. reaching for a pencil on the desk, he cannot do so. Bender has suggested, however, that perceptual deficits may contribute to the final picture, the hyperkinetic exploration being the child's efforts at reaching out for the world with a defective perceptive apparatus. Here again the problem may involve impulse control on a perceptual level. The sensory apparatus may become flooded with stimuli, all receiving equal value in awareness so that the attention cannot be directed to any single one. This theory has some further support in that the organic child has notorious difficulty in figure-background perception. This will be described under Perception. Abstract reasoning may also be diffuse,[32] associations flowing, controlled with difficulty. In less severe organic defect hyperkinesis may appear only in stress situations. The parents of an 11-year-old girl, for example, described her as in constant motion, distractible, flighty. On examination she was inhibited in motor activity to the extent of hypokinesis. Her hyperkinesis appeared in response to the stress at home. In another child, five years old, relatively mild physiological stress, as, for example, a mild upper respiratory tract infection, would make him "high," restless and excitable, chattering and singing.

The hyperkinetic child does not always confine his explorations to inanimate objects in the environment, but adults and other children are also objects of investigation; touching and mouthing, grasping,

"loving" in an unrestrained manner. Other children may interpret this as aggression, their parents with annoyance, resulting in psychological isolation of the biologically deviate child. Psychologically, the hyperkinetic child is continually seeking and reaching out, but unfortunately his desire is rarely fulfilled.

Whereas the impulses of the hyperkinetic child are in flood, it is as though in the hypokinetic child his impulses are frozen. He is inhibited in thought as well as in motor discharge. He is generally vigilant and fearful. His attention is also frozen, in the sensory area, fixated upon one stimulus, attracted by a minor detail; in the motor area fixated upon one motor discharge pattern. This inhibition of impulses may account for perseveration, a sticking quality to thought or action, the broken record with the needle playing in the same groove over and over again. Rather than exploring his environment, toys have to be brought to the hypokinetic child, and in his play a perseverative pattern is clearly seen. In his early history the hypokinetic pattern appears soon after birth. In these children motor or language delays are frequent. This child also has perceptual problems, but his difficulty is a psychological and a physical withdrawal, an inhibition of reaching out, which, however, can never really protect him from the world.

Retention of Primitive Motor Patterns

In the early months of life, striated muscle activity is concerned with sucking, grasping, equilibrium and respiration. A maturational sequence is observed in each of these functions (Gesell[9, 10]), which are also interrelated (Schilder[24]). Brain defects occurring early in life will interfere with the maturation of these functions, so that *sucking* and *grasping* in response to oral and perioral stimulation or to hand or foot stroking can easily be elicited in these infants. As these children grow older, sucking and grasping movements persist and, in the less seriously brain-damaged patients, are brought out only in stress situations. Primitive routes of behavior, normally closed, are left open in the organic child, and regression to early motor levels easily occurs. Psychologically, these children are infantile.

Equilibrium disturbance, inability to adjust to changes in posture and to orientation in space, is frequent. One of the early responses to changes in posture is the tonic neck reflex, appearing in intrauterine life, present in all infants in the first month of life and, according to Gesell,[9] forming the basis of all subsequent postural and equilibrium adjustments. Gesell further stresses the tonic neck response as the first indication of physiological asymmetry and relates it to what later becomes cerebral dominance (again physiologic asymmetry).[11] Orientation in space, cerebral dominance and thus language are, according to

this concept, woven together by the tonic neck response. Attempt has been made to study this and other postural adjustments in man by Hoff and Schilder[16] and later by Lauretta Bender,[4] Teicher[33] and others.[19, 23]

Postural tests, devised by Schilder, have been utilized by the Bellevue group and have been described elsewhere.[29] Briefly, the patient stands with his eyes closed and his feet together, his arms extended parallel to each other and to the floor, fingers spread apart. The patient's head is then passively rotated as far as possible without discomfort, and reaction noted. The head is then similarly rotated to the opposite side and reaction noted. While a complex, not well understood neuropsychological mechanism enters into performance of these tests, they have been clinically valuable in detecting central nervous system defects, particularly the developmental language disorders such as specific reading disability (congenital dyslexia, strephosymbolia [Orton]), developmental aphasias and developmental apraxias, in all of which cerebral dominance has not been clearly established.[20]

Delay in the Acquisition of New Patterns

Delay in the maturation of postural adjustment creates in the younger child anxiety in any play in which equilibrium is disturbed. There is a panic response to antigravity play; tossing and bouncing, which most children enjoy, becomes a frightening experience. In the older child fear of climbing, of heights, of independent motor exploration may become a generalized motor inhibition and psychological rigidity. Dreams of falling and of flying are common. Such a child, inhibited in the normal search for motor gratification, constantly seeks and needs physical support.

Frustration in motor gratification is also seen in children with delayed motor maturation. Here the child may psychologically be ready for new motor experiences, yet he cannot perform them. This relates to such basic activity as walking and running and, in the milder defects, to coordinated activity such as riding a bicycle or catching a ball. The island of retarded motor development may be found in the midst of otherwise normal function. Here the organic basis to the child's disturbance may frequently be missed not only by the parents, but also by teachers, social workers and even physicians. The parents are told not to "baby" the child. This creates further guilt in the parents and actually deprives the child of essential physical and psychological support. His reaction to this withdrawal is most often an increased effort to get parental support with increased physical clinging and psychological demanding, all of which only perpetuates the cycle of disturbance. At times an athletic-conscious father, bewildered by and resentful of his son's poor motor coordination, his inability to catch a ball or

ride a bicycle, becomes insistent, irritable and hostile to the child even to the point of ridiculing him. The child becomes caught between his motor disability and his father's hostility, and his identification as a male may hang in the balance.

Changes in Muscle Tone

In addition to problems of impulse control, delayed maturation and the retention of primitive motor patterns, the brain-damaged child may have abnormalities in muscle tonus. Extrapyramidal rigidities, corticospinal spasticity and cerebellar dyssynergia are well known. These have psychological implications. Less known, but more frequent in psychiatric experience, is the child with fluctuations in muscle tone, in whom there are showers of increased generalized tonus or in whom portions of muscles may contract. These myoclonic-like contractions may be palpated and sometimes even seen in shoulder girdle or trunk. They may contribute to restless motor activity, preventing the child from maintaining a quiet motor attitude. Younger children attempt to cover up these extraneous muscle movements by incorporating them into a motor act which then emerges in an ungainly or bizarre way. In the preschool child fluctuations in muscle tone may be appreciated by actually taking the child on the examiner's lap. Here we can also evaluate the relationship of the child to the adult, his clinging behavior, his using the adult for physical support, the ease with which he will slip into infantile postures, curling up in the examiner's lap, sometimes with added oral activity. Children over the age of eight years will also reveal their physical relationship to adults, not necessarily by lap sitting, but by the examiner's permitting some physical contact.

PERCEPTION

Perception is here defined as the awareness and meaning of sensory stimuli. "It is the way things look to us, the way they sound, feel, taste, or smell" (Allport[1]). It is in this area that the child with brain damage often has maximum difficulty. Experiences which we take for granted, the ability to see a diamond-shaped figure as a diamond-shaped figure, the ability to distinguish between our right and left hands, to see that "b" is "b" and not "d"—these are profound problems to the brain-damaged child. He may not be able to perceive visual, auditory, tactile or kinesthetic stimuli as they really are, or as the normal child perceives them. He is in effect a "perceptual cripple."[28] Perceptual difficulties may be found in each sensory avenue, but the main problems of a child may reside in one particular sensory area, e.g., visual

or auditory. It is important to plot the areas of perceptual defect for each child.

Numerous tests have been devised to detect perceptual defects. For children, many of the tests suffer from lack of normal controls at varying ages. Clinically, the Bellevue Clinic uses the following tests for routine perceptual survey:

Visual

In the visual area the *visual-motor Gestalt test* of Lauretta Bender[5] and the *marble-board test* (Strauss and Werner[30, 31]) for visual figure-background perception are used. The former offers an excellent evaluation of visual-motor maturation and brings out specific difficulties in spatial orientation. By figure-background perception we mean the ability to distinguish the foreground pattern from a distracting background, to be able to suppress the background stimuli from the center of awareness, and be aware of the foreground pattern, or even to be able to focus in attention one object from many or one thought from many. In reading, for example, we are able to focus in our attention a word, clause or sentence from the background of the printed page. Children with brain damage usually, and those with developmental language difficulties invariably, have difficulty in visual figure-background perception. It may be that they are flooded with sensory impulses, all of which reach awareness without being filtered out or modulated. This may be one source of organic distractibility and of its notoriously short attention span.

Tactile and Kinesthetic

Fortunately many children with disturbed visual perception are relatively intact via other avenues. This is particularly true of the tactile one, and tactile figure-background ability is often good when visual figure-background ability is poor. Children with specific reading disability who have difficulty in distinguishing words visually, for example, will learn kinesthetically and tactilely. They have the ability to distinguish a pattern tactilely. Our investigation of tactile perception includes, in addition to figure-background perception, tests for finger agnosia, tactile extinction phenomena, and tactile displacement.[7]

Auditory

Deficiencies in the auditory area include not only the recognition and memory of sounds, but also the meaning of sounds, i.e., understanding of spoken language.[8] The former is concerned in the recent

revival of "phonics" in the teaching of reading. Children with specific reading disability have difficulty in visual learning. Reinforcement of visual stimuli with auditory ones helps, but only when auditory perception is relatively intact. This is not always so. The understanding of spoken language is predominantly disturbed in the so-called word-deaf child (congenital auditory imperception). This is indeed a sensory aphasia and can vary in severity from mild to so severe that the child does not talk, and may be mistaken for schizophrenic or defective.

Olfactory

Olfactory perception in man does not have the practical importance of visual, auditory and tactile kinesthetic perception and has received relatively little attention in the study of brain damage.

Many other tests for study of perceptual disturbance in the organic child have been devised. These include tachistoscopic recognition,[30] critical flicker fusion frequency,[35] ability to distinguish fine differences in weights, ability to copy colored designs with blocks.[13] A perceptual survey such as that used at the Bellevue Clinic, supplemented by a standardized test for intelligence such as the Wechsler Intelligence Scale for Children[34] or the Stanford-Binet, will reveal many deficits.

It is clear that with perceptual difficulties the child will frequently have learning difficulties. Brain damage must therefore be considered in the evaluation of any child with learning problems. Perceptual problems, however, have deeper psychological implications. Just as there is frustration in motor gratification, so there is frustration in perceptual gratification. Again analogous to the reaction to motor deficits, the child with perceptual deficits may withdraw from new experiences or attempt to reach out for gratifications which come only with difficulty, if at all.

ANXIETY AND THE WAYS OF DEALING WITH IT

One of the early signs suggestive of prenatal or paranatal brain damage is persistence and exaggeration of the *Moro response*. While the physiological meaning of the Moro response is not clear, it is apparently a startle response, as if the central nervous system were suddenly and painfully flooded with stimuli. It is with this exaggerated startle response that the brain-damaged child comes into the world, and it becomes the prototype for all subsequent reactions, physical and psychological. The organism is in a constant state of alertness, it has a "predisposition to anxiety,"[15] it has a decreased ability to tolerate frustration. Goldstein[12] described the labile extreme reaction to tension

of the brain-damaged adult as "disordered and catastrophic." Such a reaction is seen also in children with organic brain disturbance. They are sensitive to frustration and anxiety, reacting to what appears to be minor frustration with temper outbursts, throwing themselves on the floor, crying bitterly, inaccessible to parental approach.

To this lowered level of tolerance to anxiety is added the anxiety caused by motor problems and perceptual distortions. The child is driven by motor impulses which are frequently beyond his control; he is pulled by fluctuations in muscle tone and handicapped by motor inadequacies and distorted perception. All these sensations and disabilities must be incorporated by the child into a concept of his own body, the way in which his body appears to himself, his body image (Schilder[25]). Environmental demands also influence the body image. At times the discrepancy between the child's image of his own body and the environmental demand is so great that he cannot, in his own mind, be like the people in the environment after whom he must pattern himself. He then has difficulty in identification. Environmental support can be crucial in helping the boy feel like a boy and the girl like a girl.[6]

How the patient reacts to the varied sources of anxiety depends upon the complex of factors described above. In general, we may describe reactions as overcompensatory and undercompensatory, recognizing that these may overlap and coexist. *Overcompensatory reactions* are (1) a denial of illness, a refusal to admit that there is anything wrong. This is not just "kidding" others. This is a "kidding" of oneself, a delusion of health. This is an undesirable reaction, since motivation for therapy is lacking. (2) A grandiose approach. In contrast to the denial of illness, this is psychologically a superficial reaction. Here the child talks "big," but in his heart he feels small. He says he can beat the boys in his class, but knows that he cannot. He tries, however, and becomes explosive when he fails. In the younger child a clowning motor behavior is seen in which he attempts to incorporate his abnormal motor activities into purposeful movement. He becomes adept at avoiding detection of his disability, but, as with most clowns, it is a sad performance. (3) Attempts to control the environment. Here is the child who is continually demanding food, toys and affection. There is no end to his incessant demands, and there is no satisfying him. With his peers he is "bossy," telling everyone what to do, making up rules of games to suit himself. Another child tries to control his environment through learning magic tricks, but here again, to prove how much he can befuddle the world, he shows the tricks to everyone and gets out of hand. All these demanding, "bossy" children are stubborn and unyielding; the game must be played now. (4) Some children have a constructive drive for mastery which they handle in a reasonably healthy way. There is a constant wish for new experiences and a constant effort at mastery,

but the drive is too great, and restraint must be imposed, or stimuli overwhelm the child.

In contrast to the overcompensatory reactions are the *undercompensatory* ones. Here the child is withdrawn, guarded and even paranoid. He is outwardly self-depreciating, thinking he is stupid and bad and very little in this world; feeling and behaving helpless, clinging and infantile. On stress, a withdrawn paranoid child may erupt into aggressive outbursts against the world or even himself, or he may become asocial.

In addition to the attempts at compensating through behavior symptoms, the whole gamut of neurotic and somatic symptoms may be present. Organic anxiety heightens the unconscious problems which every child experiences, and neurotic defenses may result. Obsessions and compulsions are defenses of choice in organic disturbances.[26] This type of defense is a rigidifying one, attempting to control anxiety by ritualizing the world. Counting compulsions, bedtime rituals, door-checking compulsions, rituals relating to school work are frequent. The obsession or compulsion is "stimulus bound," just as is the perseveration. The form of the compulsion has meaning in terms of the child's unconscious psychological conflict. Unfortunately, the compulsion never really relieves the anxiety which provokes it, so that the ritual must be repeated over and over again.

Phobias also plague the organic child. Fears of the dark, of animals, of imaginary monsters, and hypochondriasis are frequent.

SUMMARY

This paper attempts to describe the behavioral syndrome associated with brain damage in children.

The behavior of a child with brain damage is not due to the brain damage alone, but is determined by the complex interrelationship of the child's biologic abilities and disabilities, his psychologic conflicts and defenses and the environmental forces acting upon him.

Brain damage, however, does influence three areas: (1) It causes interruption in normal maturation with retention of old patterns or delay in acquisition of new ones. (2) It creates difficulty with impulse control. (3) It creates a predisposition to anxiety.

Clinically, these effects may be described in the motor, perceptual and social areas. In the motor area there is (*a*) abnormality in general kinetic pattern with hyperkinesis or hypokinesis, perseveration, distractibility, short attention span and sensory exploration of the environment; (*b*) retention of primitive motor patterns, particularly those relating to posture, equilibrium and orientation in space; (*c*) delay in acquisition of new patterns with frustration in motor gratifications; (*d*) fluctuations in muscle tonus.

In the perceptual area there may be delays in maturation or disruption of established perceptual abilities. Visual-motor disturbance, visual figure-background difficulty is frequent and important practically. Disturbances may exist, however, in other perceptual avenues, such as auditory, tactile or kinesthetic. The importance of perceptual disturbance is emphasized with the brain-damaged child described as a "perceptual cripple." Learning problems are one effect of perceptual defects.

Responses in the social area are underlined by the lowered ability of the organic child to withstand anxiety. He is emotionally labile, sensitive to frustration; his body image distorted. He may react by a real denial of illness or become grandiose, attempting to avoid detection of his disability. He attempts to control the environment by incessant demands and "bossiness," and is stubborn and unyielding. On the other hand, he may be withdrawn, guarded and paranoid, with aggressive or asocial behavior. Obsessions, compulsions and phobias are frequent attempts at psychological defense.

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SCHIZOPHRENIA IN CHILDHOOD

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Schizophrenia is being recognized in children with increasing frequency. It should be considered in the differential diagnosis of every severely disturbed child. Though not as common as in adults, it is by no means rare. The diagnosis is often missed, and many of these children reside in institutions for mental defectives.

SYMPTOMS

An abrupt onset, such as is seen in adults, is uncommon in children. When this does occur, the presenting symptom is usually extreme anxiety. More commonly the children have exhibited unusual behavior for some time before they are brought to the physician.

The most striking symptom is a withdrawal of interest from the realities of everyday living—parents, friends, school work. Sometimes even dressing, undressing and washing are neglected. The child may sit for ours, day after day, occupied with a bit of string, a toy, a lock, a puzzle, a spinning phonograph record. He may draw pictures for hours, seemingly never satisfied with his productions. If he is interrupted, he may accept the interruption without any show of emotion, or he may become excessively angry and even panicky. Other persons in the environment are disregarded or used merely as though they were physical objects.

Motor hypoactivity may alternate with periods of overactivity. During the periods of activity there is a vague wandering, a restless to-and-fro pacing, body rocking, endless swinging from a bar, whirling, or bizarre hand movements. The overactivity of the schizophrenic child,

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in contrast to that of the "organic" child, is purposeless, repetitious and rhythmic.

The facial expression may be blank and unexpressive, worried or meditative.

Emotional responsiveness is markedly altered. The child seems remote, and parents often complain that they cannot "reach" him or "get close" to him. Despite his emotional detachment the sick child may cling to a parent or other person as though in anxious panic. There is rigidity and resistance to entering new situations and relationships with people. Pressure to socialize may lead to negativism. By contrast, other schizophrenic children are extremely submissive. Temper tantrums are common. They may appear without provocation and are often severe. Despert[8] has observed excessive sexual preoccupation, often with constant masturbation, and aggressive behavior, especially of the impulsive and destructive type, sometimes including attempts at self-destruction.

Children who have already acquired language may be interested in abstractions such as the nature of the universe, the origin of life, problems of space. They seem to live in a world of their own—a world peopled by their fantasies. It is sometimes possible to elicit sensations of "introjected bodies," e.g., voices or devils or little red men inside the head or abdomen, which guide their thoughts and are responsible for their misbehavior. Later on there may be auditory or visual hallucinations—hearing strange voices, seeing threatening objects on the ceiling, and so on.

Some children talk about their bodies changing shape, animals crawling on their skin, their heads flying off in an elevator, hearing through the umbilicus, and so on. An eight-year-old boy had his own imaginary land, inhabited only by children. This land was called "Gypsy" and was reached by the child flushing himself down the toilet. A 10-year-old boy had a machine in the basement of his home which manufactured acid and which he ran by "mind" control.

Extreme compulsions are often seen in schizophrenic children. These may relate to any aspect of the youngster's daily activities—eating, sleeping, dressing and undressing, going to the toilet. Extreme anxiety, great resistance, even violent outbursts of aggression are shown when any effort is made to interfere with these compulsions. Phobias are frequent.

In some instances extreme anxiety is the dominant manifestation of the disease. This may express itself in excessive fear of the dark, of dogs, of insects, of being alone, or riding in an elevator, of going to school (school phobia).

Other suggestive symptoms are prepuberal confusion about their own sex role, homosexual trends, preoccupation with suicide and death. Bender[3] observed these symptoms in a group of children, studied on the

wards of Bellevue Hospital, who turned out to be schizophrenic on later follow-up.

Bender[3] described a group of schizophrenic children who are precocious, rapid developers and mentally brilliant. They are overactive and highly articulate and often show special gifts, especially in language, the graphic arts, and dancing. They overidentify with persons about them and seem to relate too well. They excel in abstract thinking and often have insight into their psychologic problems.

Early infantile autism, generally regarded as the earliest form of schizophrenia, was first described by Kanner[15] in 1944 and is discussed on page 711.

A clinical form of childhood psychosis, described by Mahler, Ross and DeFries,[19, 20] has been referred to as *symbiotic infantile psychosis*. The onset is usually between 2½ and five years. The symptoms may be set off by a physical or emotional stress such as an illness, birth of a sibling, placement in nursery school.

The principal symptom is a severe panic reaction when any attempt is made to separate child from mother. Behavior is dominated by severe temper tantrums and panic-stricken agitation. The frustration threshold is low. The emotional outbursts are often followed by bizarre ideation and behavior. These children crave body contact, yet often violently resist overt manifestations of affection even though they may have asked for it themselves in the first place. Symbiotic behavior may alternate with autistic patterns.

Despert[8] has described a series of cases with *obsessive-compulsive neurosis* which she regards as different from schizophrenia. In her series the symptoms were sufficiently severe to interfere with intellectual and social functioning, owing to the intensity of the anxiety. She regards the essential feature differentiating these cases from schizophrenia to be the appreciation by the child of the unreality of the obsessive thought or the compulsive act. There is no break with reality.

Preschizophrenic Manifestations

Efforts have been made to detect changes in behavior and feeling in the early histories of schizophrenic children. Bergman and Escalona[5] described a group of infants who were unusually sensitive to sensory stimuli—sound, touch, temperature, equilibrium, light, color, taste, smell, and so on. One baby 10 months of age reacted violently to color. She almost leaped out of her mother's arm when she saw a bouquet of red flowers, and refused to eat foods which were yellow. Later on she reversed herself, and all her clothes had to be yellow, never red. The children showed precocity in certain aspects of their personalities and gave the impression of being unusually gifted. On further observation

and closer study, however, it was found that most, if not all, of these children suffered from childhood psychosis.

Bender and Freedman[4] studied the early developmental histories of eight children who later became schizophrenic. Data were obtained from diaries and baby books kept by the mothers. All eight children were born at or after term. The weights at birth were within the normal range. Among the notations made by mothers at birth were the following: "looked premature"; "looked like a thin, little old man"; "extraordinarily pale"; "delicate and beautiful"; "had no fight in him"; "looked like a sober, disapproving, little old lady."

Most of the babies did poorly during early infancy, requiring frequent changes of formula. There were complaints of diarrhea, vomiting, colic, pylorospasm, excessive crying and poor sleep. Gastrointestinal upsets and respiratory infections were frequent. Somewhat later, difficulties were encountered in introducing solid foods. Irregularities in motor development were also observed. Two children showed precocious activity, being able to crawl at four weeks; later they both lapsed into practical immobility for months.

At six months the children appeared unhappy. Rhythmic habits were often indulged in to excess. Sleep was restless. Frequent colds and gastrointestinal symptoms, such as constipation, diarrhea, gagging on food, foul breath, continued. Emotional instability, as evidenced by intense interest in an object alternating with apathy, outbursts of rage, excessive shyness and screaming at the approach of strangers appeared at this time. Several of the mothers remarked on the babies being unusually beautiful and made the point that they had an ethereal, peculiar translucent kind of beauty which was different from that of the normal baby.

At 12 months the preschizophrenic children were reported to be unduly susceptible to respiratory infections, often with high temperatures and excessive sweating. Some were large, obese and flabby; others tall, pale and asthenic. Motor activity varied widely. Some babies were lethargic, others overactive. As a group they were considered by their mothers to be extraordinarily shy and dependent. A lack of responsiveness and an inability to vocalize were observed in some children. At one time or another four of the eight children were considered to be deaf, though they were not.

By two years the preschizophrenic children showed many of the features characteristic of their disease. They displayed many fears—of high ceilings, strange places, rapid movements as in trains or elevators. Ritualistic or compulsive behavior was prominent. Despite their dependency and demanding behavior, the youngsters did not respond in normal fashion to affection and were often referred to by their mothers as "remote." Some avoided other children or were openly hostile.

At 2½ years regressive behavior was already present, particularly in

speech. One child, who formerly showed a precocious interest in nursery rhymes and books, lost these interests and became compulsively preoccupied with kitchen drawers, pots, electric plugs. Another, previously able to repeat a nursery rhyme in Italian, lost this ability and ceased talking entirely. Play at this age was compulsive and destructive. Violent temper tantrums were also seen.

The observations of Bender and Freedman are open to two criticisms: failure to review the diaries and baby books of a comparable group of normal children, and the fact that the diaries and baby books in the schizophrenic children were kept by mothers who are themselves suspect of unusual behavior and whose descriptions and interpretations of their children's behavior must therefore be accepted with reservations.

Nevertheless the data suggest that schizophrenia, even in young children, may be foreshadowed by unusual behavior for several years before the disease becomes manifest, and may even be present at birth.

A retrospective study of the early life experiences of schizophrenics was reported by Prout and White.[22] They interviewed the mothers, and siblings of the same sex, as well as the patients themselves. They were aware of the fallacies in such interviews and present their views cautiously.

The patients during childhood seemed to react more severely to common traumatic experiences—such as death of a grandparent, moving to a new locality—than did their siblings. Neither neurotic symptoms nor autistic leanings were more frequent in preschizophrenic children. They were more sensitive, less happy, less social and less independent than their healthy siblings. On the whole they were sweet and easy children, but passive and dependent. During adolescence they became increasingly involved with their own problems, sensitive and serious.

A basic difference in personality, which dated back to early childhood, was the preschizophrenic's need for protection by the mother. A second difference was the exaggerated reaction to psychic or physical trauma. The authors regard their findings as consistent with the view that schizophrenia is unrelated to external stress or deprivation.

Psychologic testing often gives helpful information. Although their performance on the Stanford-Binet test may at times differ little from that of normal children, many show considerable unevenness. Des Laurier and Halpern[7] call attention to an unexpected and unpredictable break in performance which appears to be unrelated to the difficulty of the task. Unlike the normal child, in whom there is a fairly even progression of successes with failures increasing as the tasks become more difficult, in the schizophrenic child successes and failures may occur in jumbled fashion. The poor responses may be the result of a sudden preoccupation with some unimportant irrelevant detail or

may be caused by inner, uncontrollable pressures with atypical associations and formulations. Consequently the response is not only incorrect, it often seems illogical. Even correct responses may be arrived at by round-about lines of reasoning.

Drawings may reveal the bizarre preoccupations of the schizophrenic child. A drawing of a person which scores far in advance of what might be expected from general behavior and from a satisfactory Stanford-Binet test suggests a diagnosis of schizophrenia.

The Rorschach and thematic apperception tests are sometimes helpful. In the latter test, pictures are presented to the child, and he is asked to make up a story about them. The schizophrenic child often builds up dramatic tales which may have no relation to the picture presented. The tales may be fantastic or concern such abstract problems as life, death, God, the devil, and so on. In addition, he tends to interpret the pictures as relating to himself.

ETIOLOGY

Genetic Factors

Convincing evidence of the importance of the genetic factor in the etiology of schizophrenia is found in the data on twins and on family incidence. The material on twins has been assembled by Kallmann.[14] When correction is made for the later development of schizophrenia in the co-twin (Kallmann), concordance among one-egg twinships amounts to 86 per cent and among two-egg twinships to 15 per cent.

The high degree of concordance between one-egg co-twins, compared with the relatively low agreement in two-egg twinships, is striking evidence of the great influence which the genetic factor exerts in the expression of schizophrenia.

Kallmann's results agree closely with those reported some years ago by Luxenburger.[16]

Further support for the genetic basis of schizophrenia is found in the incidence of the ailment among near relatives (Table 6). The data

TABLE 6. *Incidence of Schizophrenia in Close Relatives of Patients, Corrected for Age*

RELATIONSHIP	CORRECTED MORBIDITY RATE (PER CENT)
Spouse	2
Step-siblings	2
Half-siblings	7
Parents	9
Full siblings	14
Two-egg twin	15
One-egg twin	86

Reproduced from Reed,[23] based on Kallmann's data,[14] with the kind permission of Reed.

show well how the expectancy of schizophrenia rises as the blood relationship with the patient becomes closer. It is significant that the frequency of schizophrenia in the other member of a two-egg twinship (15 per cent) is practically the same as in siblings (14 per cent).

Childhood schizophrenia is more common in boys than in girls. In Bender's[3] group of patients, three to 11 years old, there were four times as many boys as girls. Similar findings have been reported by Kallmann[14] and by others. The male preponderance disappears by about 14 years; thereafter more females are affected.

Environmental Factors

The interplay of multiple factors in the etiology of schizophrenia—as in many other conditions—must be kept clearly in mind. Given the genetic basis, in certain patients at any rate, it is likely that the psychologic environment has more or less influence. This is borne out by the studies on twins. Even in one-egg twinships schizophrenia does not always become manifest in both members at the same time; nor is there, as far as has been reported, 100 per cent concordance.

There is little definite information regarding the influence of environmental factors on the expression of schizophrenia. Presumably a warm, accepting, stable home environment will tend to alleviate the symptoms and delay their appearance; conversely, an unstable family setup, with parents who are cold and critical, rejecting or unduly domineering, possibly themselves abnormal, will worsen the conditions. Similarly, a deficit such as reading disability which increases learning stresses on the child may exaggerate his problems.

Considerable interest has centered around the parents as an etiologic factor. The mothers have been described as aggressive, overanxious, oversolicitous, decidedly ambivalent and severely rejecting. A clear-cut parental pattern, such as Kanner[15] and Eisenberg[9] have observed in autistic children, is not seen with any regularity in the parents of schizophrenic children.

It is not clear whether the behavior of the parents of the schizophrenic children is causally related to the child's illness or represents their reaction to it. Moreover, it is conceivable that the unusual behavior of some of these parents is a manifestation of schizophrenia, but in attenuated or heterozygous form, thus implying a genetic as well as a dynamic relationship.

PATHOGENESIS[10]

The possibility of a metabolic basis for schizophrenia is being actively investigated.

Epinephrine and Norepinephrine

Though the nature and some of the actions of epinephrine have been known for a long time, its metabolism is poorly understood. Moreover, its relation to functioning of the central nervous system is obscure, and it is not clear whether it passes the blood-brain barrier readily. Because it is excreted under various stresses efforts have been made to relate it to mental illness.

The main secretion of the resting adrenal medulla is norepinephrine. This is increased in aggressive reactions, while epinephrine secretion is increased in anxious withdrawal. There is evidence that, in psychotic patients, either one or the other of these reactions is unable to return to the resting level after stress as it does in normal persons.

The relation of various degradation products of epinephrine to schizophrenia has been studied by a number of observers. Hoffer, Osmund and Smythies[11] reported the production of mental symptoms closely resembling those of schizophrenia following the injection of adrenochrome. Rinkle, Hyde and Solomon[24] were unable to confirm their findings. They regard the hallucinatory effect of the injection mixture used by Hoffer et al. as due to adrenoxin, another oxidation product of epinephrine. It has also been suggested that adrenolutin, another degradation product of epinephrine, might be responsible for the psychotic symptoms. None of these substances has as yet been discovered in vivo.

Norepinephrine, like serotonin, has been found in large amounts in the hypothalamus. Its concentration, again like that of serotonin, is reduced by Reserpine.

Ceruloplasmin

Ceruloplasmin, the copper-carrying protein in plasma, was isolated by Holmberg and Laurell[12] in 1948. It is present in the alpha globulin fraction and probably carries all the serum copper. It is an oxidase.

According to Ackerfeldt,[1] the serum ceruloplasmin is elevated in about 80 per cent of adults with schizophrenia and in only about 3 per cent of normal persons. Elevated values were also found in patients with liver disease, neoplasm and in pregnant women during the last trimester of pregnancy. Recent workers[13, 25] have failed to confirm Ackerfeldt's findings in schizophrenia. We have found no elevation in the serum ceruloplasmin in 45 children with schizophrenia.

Aromatic Amino Acid Excretion

McGreer, McGreer and Gibson[18] examined the morning urine of schizophrenic patients, patients with other mental disorders and nor-

mal persons. The urinary chromatograms of schizophrenics showed more diazo coupling compounds that did the urine of nonschizophrenics. There was no constant pattern of excretion. The difference was quantitative rather than qualitative.

The urine reverted to normal or near normal when a diet low in aromatic amino acids was given to schizophrenic patients, but no change in the mental or physical status of the patient could be detected.[17]

Bogoch,[6] using a double-blind technique, observed a worsening of the symptoms in 13 of 22 young hospitalized schizophrenic patients receiving a diet grossly deficient in aromatic amino acids for three weeks. The condition remained unchanged in the remaining nine.

Pineal Extract

Altschule[2] reported that the injection of alkaline protein-free extract of beef pineal gland reverses certain biochemical abnormalities of schizophrenia and produces clinical improvement.

PROGNOSIS

A depressing outlook for children with schizophrenia is given by Bender.[3] She followed up 120 children, diagnosed as schizophrenic on the wards of the Children's Psychiatric Service, Bellevue Hospital. Most of the children were three to 11 years of age at the time of initial observation and 17 to 26 years when the follow-up study was made. Sixty-nine of the 120 were in state institutions with a diagnosis of schizophrenia, and 16 others were in institutions for the mentally defective. They were probably also schizophrenic. Another nine were in State hospitals with diagnoses of other forms of psychosis. Sixteen were in the community and probably schizophrenic; 10 were diagnosed as having a personality disorder. Only a handful were in the community making a fair to good adjustment at the time of the follow-up.

Bender's results at Bellevue Hospital, which cares for severely ill children, cannot be applied to schizophrenic children in general. If the illness is not too severe, if the parents are warm and understanding, if the general intelligence is good, many schizophrenic children can function adequately, even at a high scholastic level. Psychiatric guidance should aid the child in handling his anxiety and in bolstering the devices used to cover up his deficiencies.

MANAGEMENT[26]

When possible, the schizophrenic child should be taken care of at home. Institutional care is reserved for those children whose behavior

is so abnormal that they are unmanageable in the home and the community, or when the parents are themselves so disturbed that there is little chance of influencing them to an understanding and tolerant attitude. Institutional care may be necessary, also, when school or other group activities in the community are unavailable.

A great drawback to caring for schizophrenic children in the home is the difficulty in finding day schools which will accept them. To fill this need the League for Emotionally Disturbed Children has sponsored special schools in a number of communities. The schools serve, also, to train teachers and to develop techniques for handling the schizophrenic child. In addition, the League for Emotionally Disturbed Children has a referral and counseling service, sponsors parent-therapy groups, and carries on a program of public education.

Drugs which reduce anxiety are sometimes useful. Of these, Benadryl and amphetamine are most helpful. The effect of Thorazine and Reserpine has not been carefully studied. Barbiturates are generally ineffective and sometimes harmful.

Psychotherapy may be of benefit principally to reduce anxiety. Such treatment may consist merely in occasional encouraging talks, or it may mean prolonged, intensive interviews.

The sources of anxiety in the schizophrenic child are awareness that he is different from other children; inability to adequately control destructive, aggressive and sexual impulses as well as abnormal body sensations; the usual anxieties associated with everyday living which are magnified and distorted; distortions of mental functioning which are part of the disease itself.

Silver[25] recommends strengthening the child's neurotic defenses against his anxieties; i.e., encouraging and helping him in the behavioral devices he uses to cover up his disturbed thinking.

Feelings of guilt, rejection, hostility are common in the parents of schizophrenic children. Group therapy[21]—i. e., providing opportunities for parents to get together and discuss their common problems under the guidance of a psychiatrist—has been found helpful.

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EARLY INFANTILE AUTISM

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In 1938 a number of children were observed whose unusual characteristics seemed worthy of special consideration and whose clinical picture appeared to comprise a psychotic illness heretofore undescribed. During the ensuing five years 11 such children were studied in detail, and the observations were reported in 1943 under the title "Autistic Disturbances of Affective Contact."[20] In this and subsequent publications the syndrome was noted to be recognizable as early as the first or second year of life. Two outstanding characteristics, extreme aloneness and a desire for the preservation of sameness, were delineated and established as essential diagnostic criteria. The designation "early infantile autism" was suggested by the unmistakable evidence of typical symptoms in the first two years of life and the self-centered and, at least in the beginning, often impenetrable aloneness.

The first reports met with some skepticism, but subsequently numerous confirmatory reports were published. In addition to our own cases, autistic children were studied in this country by Despert,[9–11] Mahler,[31,32] Weil,[41] Murphy,[33] Rank,[34,35] and others; in Canada by Cappon;[5] in England by Creak;[6, 7] in France by Stern and Schachter;[39, 40] and in The Netherlands by van Krevelen[29, 30] and Grewel.[19] A number of workers have discussed the theoretical implications for language and perceptual function of the phenomena shown by the autistic child. It therefore seems justified to state that the specificity of early infantile autism is now rather commonly accepted, with some differences, however, in diagnostic allocation.

CASE HISTORIES

Two case histories are introduced to show the typical symptomatology and to indicate the wide range of later development.

CASE I. Margaret J. was brought by her parents on March 8, 1943, at the age of 5 years 10 months. She was referred with the complaint that "she is a behavior problem in the sense that in a small public school she has made herself so objectionable that the school refuses to take her back."

The mother recalled that Margaret showed *"peculiar traits" when she was less than one year old.* "For instance, when we would sit on a certain chair upon which she did not like us to sit or which she felt should be occupied by another member of the family, she would scream. She always insisted on entering the garden through a certain door. She would notice when the dishes on a tray were not in the accustomed order." She seemed friendly and smiled, but never looked at a person. She never addressed her parents as "Mommy" or "Papa." She rolled a great deal in her crib and banged her head against the bars.

Margaret was a planned and wanted child. The pregnancy was uneventful. She was delivered at term by low forceps and was healthy at birth. There was no indication of birth trauma. She was placed at the breast and given a supplementary feeding for 6 weeks. "She always loved to eat" and presented no feeding problem, but drank little milk. She was easily toilet-trained. Past illnesses included a mild, uncomplicated case of measles and a "cold with high fever way after she was one year old." There was no history of injuries, operations or convulsions.

Her general development was said to be slow. She stood at 10 months and walked at 22 months, after a phase of crawling. At 18 months an x-ray examination of the long bones ruled out rickets.

She talked before she walked. She could repeat short sentences, but had no interest in making conversation. "She did not use the right pronouns. She said 'You,' meaning 'I,' and still occasionally does. For a long time we were distressed because she did not use a definite Yes or No in an answer. When asked if she wanted milk, she replied, 'Margaret wants her milk.' " Formation of plurals and tenses presented no difficulties.

At 3½ years "she cried a lot and was given to tantrums. She would get up and touch things in the same order—every morning." She was entered in nursery school because it was felt that she was spoiled and needed more discipline. At the beginning she showed no interest in the other children, but stayed at the edge of the group or by herself, happily swinging or playing alone. After some time she improved sufficiently in her relationships to be tried in a public kindergarten. Her adjustment there was poor. Though she cooperated in music and rhythm, she could not become interested in reading. When a story was read at school, she paid no attention, giggled hysterically and disturbed the group. It soon became apparent that she would not "make the grade." Her career at this school was terminated abruptly when she urinated and defecated in a waste paper basket. "She was quite hysterical about it and thought it was a good joke."

In reference to more recent behavior, the mother said, "She has the most amazing memory I have ever seen. She notices many details; for instance, she knows how many tiles there are in the bathroom. She has to hear a nursery rhyme only once, then recognizes the tune. She can tell Victrola records from the type of sealing . . . She counts very well, knows her colors, and can identify pictures, especially of airplanes. She draws well, usually with her left hand. She cuts with her right hand. She starts to read from right to left and sometimes looks at pictures turned upside down.

"Recently her behavior has changed somewhat. She used to touch the floor all the time, but got over that. Now she pops her eyes and giggles. She is terrified by an elevator. During the train trip to the clinic she was interested in everything; noticed people, and talked. She shows a particular interest in body discharges. She asked a taxi driver who cleared his throat, 'Did you have phlegm in your throat?' She is very observant and interested if somebody goes to the bathroom."

Margaret is the younger of 2 children. The mother, a college graduate librarian, is a high-strung, intelligent person who worries a great deal and is devoted to her children and family. She describes her husband, a successful advertising copywriter, as "not too warm a person who is considered by many people as conceited, but who is devoted to his family." Both parents are sociable people and have many friends. The family is financially comfortable. There is one brother, William, who was characterized at that

time as "a perfectly normal boy who is in good rapport with people and makes friends very easily."

Physical examination at our clinic revealed a well developed, attractive child, with abundant, coarse brunette hair. There were no physical or neurological abnormalities noted. X-ray examination of the skull was read as normal.

Margaret entered the consultation room without looking at any person and asked, "Who is that?", meaning the examiner. She shook hands, but did not look at the person with whom she shook hands. She was deeply absorbed in her play with blocks, with which she built a certain pattern. She showed good manual dexterity, using both hands alternately. She named each of the blocks and was anxious to place them in particular positions to each other, following a certain purposefulness and certain rules, which she made up for herself. As long as she was left alone, she was completely happy and satisfied, talking to herself, plainly, but for the outsider, incoherently. From time to time she looked in self-abandonment into the air, asking, "What made the ceiling crack itself?" When anyone interfered with her realm, by moving or taking a block, she became angry, shouted, "Don't!", then jumped up, becoming aggressive, hitting and kicking, and showing her typical reaction of frustration mixed with anger. She put her fingers in her mouth and twisted her hair with the other hand, standing motionless and staring into space. As soon as one restored the changed or missing object, she snapped out of the reaction. This pattern of behavior could be provoked by any interference with her occupation.

In the second interview Margaret, upon returning, amazed everyone by demanding the same blocks. She recalled exactly the names which she had given them the day before and proceeded to arrange them in precisely the same pattern. She asked for the same puzzles and assembled them exactly as on the previous day. When given crayons and paper, she drew airplanes, while mumbling, "Airplanes flying over Europe and the Philippines."

The next day, when seen in her hospital room, she was lying on her bed, sucking her fingers, and rolling in ecstasy from side to side. She used personal pronouns correctly and showed a good vocabulary. She moved gracefully and quickly. A complete Binet test could not be given because of insufficient responsiveness, but the general impression was that she was of at least normal intelligence.

Placement in a special school was recommended, and this recommendation was accepted by the parents.

During an interview in February, 1944, it was learned that Margaret had returned to public school and had indeed made a surprising adjustment. She passed thereafter from the second through the sixth grades; then she entered a private school in upper New York State. There she was noted to be insecure, tense and anxious.

On a Wechsler Bellevue Scale, given in 1944, she attained a full scale intelligence quotient of 110.

She was seen again with her mother in December, 1953, at the age of 16 years 7 months.

She had made amazing progress and developed a great deal of insight into her own personality. She spoke of herself as "a plugger" and indicated that she put considerable pressure on herself in order to do well. She said,"Up to last year the fundamentals of learning have been easy because of my good memory, but this year it's the interpretation, and this is difficult for me." She had ambitions to go to college and added, "I may be hitching my wagon to a star." About her relationships with other children she said, "The girls in school are very nice and very friendly, and I have a good time with them. There are some points in which I am not close to them. I feel I'm not as mature as I should be; I don't have the interest in boys that most girls my age have."

In the fall of 1953 Margaret entered a well known women's college and graduated in 1957. She selected subjects in which rote memory rather than spontaneous production was essential. She took part in routine activities, though she made few, if any, real friendships. She is a serious, rather literal-minded young woman who augurs to do reasonably well in an occupation in which no demand is made on give-and-take relationship with other people.

CASE II. Elaine C. was brought by her parents on April 12, 1939, at 7 years 2 months, because of "unusual development." "She doesn't adjust. She stops at all abstractions. She doesn't understand other children's games, doesn't retain interest in stories read to her, wanders off and walks by herself, is especially fond of animals of all kinds, occasionally mimics them by walking on all fours and making strange noises."

Elaine was born on February 3, 1932, at term. She appeared healthy, took feedings well, stood at 7 months and walked at less than a year. She could say 4 words at the end of her first year, but made no progress in linguistic development for the following 4 years. Deafness was suspected, but was ruled out. Because of febrile illness at 13 months, her increasing difficulties were interpreted as possible postencephalitic behavior disorder. Others blamed the mother, who was accused of inadequate handling of the child. Feeblemindedness was another diagnosis. For 18 months she was given anterior pituitary and thyroid preparations. "Some doctors," struck by Elaine's intelligent physiognomy, "thought she was a normal child and said that she would outgrow this."

At 2 years she was sent to a nursery school, where "she independently went her way, not doing what the others did. She, for instance, drank the water and ate the plant when they were being taught to handle flowers." She developed an early interest in pictures of animals. Though generally restless, she could concentrate for hours on looking at such pictures, "especially engravings."

When she began to speak by about 5 years, she started out with complete though simple sentences that were "mechanical phrases" not related to the situation of the moment or related to it in a peculiar metaphorical way. She had an excellent vocabulary and knew especially the names and "classifications" of animals. She did not use pronouns correctly, but used plurals and tenses well. She "could not use negatives, but recognized their meaning when others used them."

There were many peculiarities in her relation to situations:

"She can count by rote. She can set the table for numbers of people if the names are given her or enumerated in any way, but she cannot set the table for three. If sent for a specific object in a certain place, she cannot bring it if it is somewhere else but still visible."

She was "frightened" by noises and anything moving toward her. She was so afraid of the vacuum cleaner that she would not even go near the closet where it was kept, and when it was used, ran out into the garage, covering her ears with her hands.

Elaine was the older of 2 children. Her father, aged 36, studied law and the liberal arts in 3 universities (including the Sorbonne), was an advertising copywriter, "one of those chronically thin persons, nervous energy readily expended." The mother, aged 32, a "self-controlled, placid, logical person," had done editorial work for a magazine before marriage.

Elaine had been examined by a Boston psychologist at nearly 7 years of age. The report stated, among other things:

"Her attitude toward the examiner remained vague and detached. Even when annoyed by restraint, she might vigorously push aside a table or restraining hand with a scream, but she made no personal appeal for help or sympathy. At favorable moments she was competent in handling her crayons or assembling pieces to form pictures of animals. She could name a wide variety of pictures, including elephants, alligators and dinosaurs. She used language in simple sentence structure, but rarely answered a direct question. As she plays, she repeats over and over phrases which are seemingly irrelevant to the immediate situation."

When examined in April, 1939, she shook hands with the physician upon request, without looking at him, then ran to the window and looked out. She automatically heeded the invitation to sit down. Her reaction to questions—after several repetitions—was a parroting of the whole question or, if it was too lengthy, of the end portion. She had no real contact with the persons in the office. Her expression was blank, though not unintelligent, and there were no communicative gestures. At one time, without changing her physiognomy, she said suddenly, "Fishes don't cry." After a time she got up and left the room.

She was placed at the Child Study Home of Maryland, where she was observed

for 3 weeks. While there, she soon learned the names of all the children, knew the color of their eyes, the bed in which each slept, and many other details about them, but never entered into any relationship with them. When taken to the playgrounds, she was extremely upset and ran back to her room. She was very restless, but, when allowed to look at pictures, play alone with blocks, draw, or string beads, she could entertain herself contentedly for hours. Any noise, any interruption disturbed her. Once, when on the toilet seat, she heard a knocking in the pipes; for several days thereafter, even when put on a chamber pot in her own room, she did not move her bowels, anxiously listening for the noise. She frequently ejaculated stereotyped phrases, such as, "Dinosaurs don't cry"; "Crayfish, sharks, fish and rocks"; "Butterflies live in children's stomachs, and in their panties, too"; "Fish have sharp teeth and bite little children"; "There is war in the sky"; "Gargoyles bite children and drink oil"; "I will crush old angle worm, he bites children"; "Needle head. Pink wee-wee. Has a yellow leg. Cutting the dead deer. Poison deer. Poor Elaine. No tadpoles in the house. Men broke deer's leg."

A few excerpts from the observations follow.

"Her language always has the same quality. Her speech is never accompanied by facial expression or gestures. She does not look into one's face. Her voice is peculiarly unmodulated, somewhat hoarse; she utters words in an abrupt manner. Her utterances are impersonal. She never uses the personal pronouns of the first and second persons correctly. She does not seem able to conceive the real meaning of these words. Her grammar is inflexible. She uses sentences just as she has heard them, without adapting them grammatically to the situation of the moment. When she says, "Want me to draw a spider," she means, "I want you to draw a spider." She affirms by repeating a question literally, and she negates by not complying. Her speech is rarely communicative. She has no relation to children, has never talked to them, been friendly with them or played with them. She moves among them like a strange being, as one moves between the pieces of furniture of a room. She insists on the repetition of the same routine always. Interruption of the routine is one of the most frequent occasions for her outbursts. Her own activities are simple and repetitious. She is able to spend hours in some form of daydreaming and seems to be very happy with it. She is inclined to rhythmical movements which always are masturbatory. She masturbates more in periods of excitement than during calm happiness. Her movements are quick and skillful."

Elaine was placed in a private school in Pennsylvania. In a progress letter the father reported "rather amazing changes": "She is a tall husky girl with clear eyes that have long since lost any trace of that animal wildness they periodically showed in the time you knew her. She speaks well on almost any subject, though with something of an odd intonation. Her conversation is still rambling talk, frequently with an amusing point, and it is only occasional, deliberate, and announced. She reads very well, but she reads fast, jumbling words, not pronouncing words, not pronouncing clearly, and not making proper emphases. Her range of information is really quite wide, and her memory almost infallible. It is obvious that Elaine is not normal. Failure in anything leads to a feeling of defeat, of despair, and to a momentary fit of depression."

The father's optimism proved to be premature. The next communication concerning Elaine came from a psychiatric evaluation center in New York state where she was admitted September 7, 1950. Her behavior there was described as follows:

"From the time of admission the patient was a serious behavior problem. She was overactive, distractible, spontaneously assaultive on many occasions and talked in an irrational manner with a flat degree of affect. She ran through the wards without clothing, threw furniture about and banged her head on the wall, had episodes of laughing and screaming during the night and imitated various animal sounds. She made frequent reference to animals and to being killed or butchered. In conversation with her she showed a good choice of vocabulary but could not maintain a conversation along a given topic. EEG made on her did not show any definite abnormality. Her disturbed and unpredictable behavior continued, and she failed to profit by the program of the institution. Considerable time was spent with her in the occupational

therapy department in trying to make an individual appeal, but her conduct continued in the same degree.

"In view of her behavior making her a source of danger to herself and others, and since her instability and irrational behavior was of sufficient degree to constitute a mental illness, the matter was referred to the Department of Mental Hygiene who concurred and instructed that she be certified to a state hospital for care and treatment."

THE CLINICAL PICTURE

Among the 150 children observed at the Children's Psychiatric Service of the Johns Hopkins Hospital, the case studies offer individual differences in specific features, family constellations, and step-by-step development over the course of years. Even a superficial review, however, reveals the emergence of a number of essential characteristics which together constitute a unique clinical syndrome. These may be grouped into two primary or cardinal features: *extreme self-isolation* and an *anxiously obsessive desire for the preservation of sameness.* A number of secondary features may be considered derivatives of these.

The common denominator, as pointed out in the original paper, is "the children's inability to relate themselves in the ordinary way to people and situations from the beginning of life." The children are described by their parents as "having always been self-sufficient," "like in a shell," "happiest when left alone," "acting as if people weren't there," "perfectly oblivious to everything about him," "giving the impression of silent wisdom," "failing to develop the usual amount of social awareness," "acting almost as if hypnotized." This does not represent a departure or withdrawal from previous relationships, but rather, from the start, an *extreme autistic aloneness* which, whenever possible, disregards, ignores, shuts out anything that comes to the child from the outside. Direct physical contact or such motion or noise as threatens to disrupt the aloneness is either treated as if it were not there or painfully resented as a distressing interference.

The parents of autistic children can almost invariably recall the child's *failure to assume an anticipatory posture* when picked up from the crib or to show the usual body molding when carried in the parent's arms. The parents have the sensation of lifting and carrying a sack of flour rather than a child.

Food, as the first intrusion brought to the child from the outside, is often resisted or refused. The history of *early feeding difficulties* is commonly obtained. Occasionally tube feeding is reported to have been tried. This problem usually disappears after a few months, often abruptly.

Language is a function of human relatedness which ordinarily serves for communication. Autistic children seem to feel no need for communication. Approximately one third of these children remain "mute,"

but even in these the rare utterance of a whole sentence in an emergency situation attests to the child's ability to store up and use language.

In the "speaking" children, language is not used initially to convey meaning to others. Phonation, articulation and naming of objects present no difficulty. Many parents proudly tell about the facility with which the child repeats an inordinate number of miscellaneous items such as nursery rhymes, prayers, lists of animals, roster of presidents, the alphabet forward and backward and even French lullabies. Aside from repetitions of sentences, these children are usually late in putting words together as tools for receiving and imparting meaningful messages. When sentences are finally formed, they are for a long time mostly parrot-like repetitions of previously heard word combinations. They are sometimes echoed immediately, but just as often "stored" by the child and uttered at a later date—a phenomenon termed *delayed echolalia.*

The apparent irrelevance of utterances of these children is more understandable when one regards them as metaphorical expressions. They differ from the usual metaphors of poetry and etymology in being idiomatic for the autistic child, not primarily intended as a means of inviting other people to understand and share in the child's symbols.

Donald T. at 7 years of age was asked the Binet question: "If I were to buy 4 cents' worth of candy and give the storekeeper 10 cents, how much money would I get back?" He obviously knew the answer. His reply, however, was not "six cents," but, "I'll draw a hexagon." Two years previously, at 5 years of age, Donald had been scribbling with crayons; all the while he kept saying with conviction, "Annette and Cecile make purple." It was learned that Donald at home had 5 bottles of paint. He named each one after one of the Dionne quintuplets. Blue became "Annette," the red became "Cecile." After that Annette became the word for blue and Cecile for red. Purple, not being one of the 5 colors, remained purple.

This concept amplifies the long-felt assumption that similar mechanisms prevail in the "irrelevant," "incoherent" and "metaphorical" language of adult schizophrenics.

Grammatical structuring often appears in bizarre ways. Affirmation is indicated by the literal repetition of the question. "Yes" is a concept that requires many years for these children to acquire. It is not initially understood as a general symbol of assent. Donald learned to say "Yes" when his father told him that he would put him on his shoulders if he said "Yes." This word came to mean only the desire to be put on his father's shoulders. It took many months before he could detach the word "Yes" from the specific situation, and it took much longer before he was able to use it as a general term of affirmation.

The same type of literalness exists also with regard to prepositions. Alfred, when asked, "What is this picture about?", replied, "People are moving about." John F. corrected his father's statement about pictures on the wall; the pictures were "*near* the wall." Donald T., when requested to put something *down*, promptly put it on the floor.

There is no difficulty with plurals or tenses. The absence of spontaneous sentence formation and the echolalia-type reproduction have given rise to a peculiar grammatical phenomenon. Personal pronouns are repeated just as heard, with no change to suit the altered situation. A child once told by his mother, "Now I will give you your milk," expresses the desire for milk in exactly the same words. Consequently he comes to speak of himself as "You" and the person addressed as "I." Not only the words but also the intonation is retained. The pronominal fixation remains until about the sixth year of life, when the child gradually learns to speak of himself in the first person and of the person addressed in the second person. In the transition period he may revert to the earlier form or at times refer to himself in the third person.

Autistic children do not face or address those who attempt to communicate with them even though they may echo what is said. It often takes numerous reiterations of a question to elicit even an echoed response. A considerable proportion of the children are initially thought of as deaf or hard of hearing.

The child's *obsessive desire for the maintenance of sameness* is continually illustrated by the monotonously repetitious nature of his noises, motions and verbal utterances. There is great limitation in the variety of his spontaneous behavior. His entire life activity becomes a series of rituals. Furthermore, he forces the other people in his world to be even more obsessive than he is. While he may make an occasional concession, he does not grant this privilege to others. Parents report how difficult it has been to "teach" the children to walk or talk. Long after they have abandoned their efforts, the child surprises them by suddenly performing these tasks with skill, then incorporating them into his routine.

The environment must be kept whole or unaltered. Anything broken, dolls "improperly" dressed, and cracks in the wall bring forth comment and unhappiness. People must also be "whole." A visible scar or wart evokes instant comment. There is no sympathy or solicitude for the person as such. The attitude is rather one of annoyance—again, not with the person, but with the fact itself.

Once blocks, beads or sticks have been assembled in a certain way, they are often regrouped later in exactly the same way, even though there was no definite design. The children's memories are phenomenal in this respect. After a lapse of several days a multitude of blocks could be rearranged, most astonishingly, by Donald T. and Margaret J. in precisely the same pattern, with the same color of each block turned up, with each picture or letter on the upper surface of each block facing in the same direction as before. The absence of a block or presence of a supernumerary block was noticed immediately, and there was an im-

perative demand for restoration of the missing piece. If someone removed a block, the child struggled to get it back, hitting the hand which held it and going into a crescendo of panic tantrum until he regained it, and then promptly and with sudden calm after the storm returned to the design and replaced the block.

At home the furniture arrangement, the location of bed and chairs, the dishes, the books on the bookshelf must remain in their precise positions. Parts of the human body are considered to have specific arrangements. A person's foot belongs on the floor and is not to be placed on a chair. Legs are not to be crossed.

Anthony F. was given the Séguin Formboard test, which he completed in 25 seconds, but he became disgusted with the star-shaped form and stated, "Star, you are bad. You should be in the sky!"

The retention of sequences is as important to the children as the maintenance of appearances and space relations.

Malcolm H., when taken for a walk, "insists on covering the same ground that has been covered on previous walks." Donald T., at the age of 9½ years, had been "going to school" since the age of 6 when the principal had agreed to let him attend. On one afternoon the session was dispensed with. No one in the family knew about this. Donald went to school as usual. Though no other child was in the classroom, he sat down in his seat, took out his books, did some writing, and left when the bell rang.

From the foregoing it can be seen that an autistic child may *relate skillfully to objects.* He is interested in them, can play with them happily for hours, can be fond of them, can have power and control over them or get angry with them. Certain children may spin everything that can possibly be spun, meanwhile jumping up and down in ecstasy while the objects whirl about. Other children sense and exercise this same power over their own bodies by rolling, whirling, rocking and other rhythmic movements. These actions and the accompanying ecstatic fervor strongly suggest the presence of masturbatory orgastic gratification.

The children's *relationship to people* is altogether different. Upon entering a playroom or office such a child goes immediately after blocks or toys without paying the least attention to anyone present. The child is aware of the people there, but considers them not differently from the way he considers the desk, bookshelf or filing cabinet. If addressed, he does not bother to look up. Conversation elicits no interest. If the adults do not intrude into his domain, he will at times, while moving between them, gently touch a hand or a knee just as he will pat the desk or couch. Should an adult forcibly intrude himself by taking a block away or stepping on an object that the child needs, he becomes angry *at the hand or foot,* which is dealt with per se and not as part of a per-

son. Once he retrieves the object, his mood changes abruptly to one of placidity. If pricked with a pin, he may show anger and fear toward the *pin*, but not the person who pricks him.

The relationship to members of the household or to other children is essentially the same. The mother or father may leave the child without protest on his part. When they return, he does not seem to have been aware of their absence.

After many outbursts of frustration he reluctantly learns to compromise and comply in matters of daily routine. When there is company, he moves among the people "like a stranger." When with other children, he does not play with them. He plays alone while they are around, maintaining no bodily, physiognomic or verbal contact with them. He does not take part in competitive games. He is just there, and if sometimes he happens to stroll as far as the periphery of a group, he soon removes himself and remains alone. At the same time he quickly becomes familiar with the names of all the children of the group, and may know the color of each child's hair and other details about each of them.

Even though most of these children are initially considered feebleminded, they are all unquestionably *endowed with good cognitive potentialities*, which are masked by the basic disorder. Their facial expressions suggest good intelligence, serious-mindedness and an anxious tenseness. When alone with objects, there is often a placid smile sometimes accompanied by happy though monotonous humming and singing. The astounding vocabulary of the speaking children, the unusual memory for events, the excellent rote memory for poems and names, and the precise recollection of complex patterns and sequences, bespeak good intelligence in the sense in which this word is commonly used. Binet or similar testing can rarely be carried out because of limited accessibility, but the children perform surprisingly well on the Séguin Formboard.

PHYSICAL EXAMINATION

Careful physical and neurological examinations have thus far failed to reveal any consistent findings that would differentiate a group of autistic children from a similar-sized group picked at random. Neither can generalizations be made on the basis of prenatal or paranatal difficulties. Of the first 100 cases seen in our clinic, difficult labor was reported in 11, precipitous labor in two, prolonged labor in seven, and placenta previa in two. Four were delivered by cesarean section, and one sustained a fracture of an arm at birth. Difficulties in breathing were stated to be present in three of those and in three others who were delivered without mishap. As for congenital anomalies, one had a clubfoot

and one had strabismus. One boy began having grand mal seizures at five years of age. Twelve were reported to have been premature; of these, eight weighed less than 6 pounds at birth.

Electroencephalographic studies have been carried out only sporadically. In one series of 28 cases so studied, 21 were stated to be normal, three definitely abnormal, and four equivocal.

It should be kept in mind that examinations for integrity of the central nervous system are still in their clinical infancy, and a negative result with current methods cannot be regarded as a conclusive demonstration of the lack of central nervous system pathology.

NOSOLOGY

The nosological position of the autistic illness remains a matter of some uncertainty. There is no clinical resemblance to any of the known organic neurological conditions. Autistic children do not appear physically ill at any specific period. Even those patients who have withdrawn to the point of functional idiocy or imbecility show, especially in their behavior with puzzles and formboards, residues of planned mental activity which should deter one from thinking in terms of a degenerative organic process.

The possibility of prenatal organic damage has been investigated, but thorough physical and laboratory examinations have thus far yielded no consistent clue of any kind.

The concept that early infantile autism is basically an aphasic phenomenon has been ruled out by the not too uncommon observation that the "mute" children sometimes surprise their parents by uttering whole, well formed sentences in emergency situations.

Van Krevelen[29] has suggested that the condition represents an "oligophrenia with concomitant emotional defects." The observation that a few of the patients who originally tested at an idiot or imbecile level achieved intelligence quotients well above 100 in their early teens would cast considerable doubt on this view.

The relation between early infantile autism and schizophrenia is difficult to determine. The extreme emotional isolation from other people, which is the foremost characteristic of early infantile autism, bears so close a resemblance to schizophrenic withdrawal that the thought of a relationship can hardly be dismissed. The demand that a period of relatively normal adjustment must precede withdrawal as a criterion for the diagnosis of schizophrenia has been revised. Studies of onset, content and course of schizophrenia in children, such as those of Ssucharewa[38] and Grebelskaya-Albatz[17, 18] in Russia and Despert[9–11] in this country, differentiate between cases with acute and insidious onset. Mahler,[31, 32] on the basis of phenomenology and the nature of the mother-child re-

lationship, worked out the helpful division between autistic and symbiotic infantile psychoses.

Early infantile autism may then be looked upon as the earliest possible manifestation of childhood schizophrenia in the broadest sense of this term. Stern and Schachter[40] have suggested that for the present the condition be considered a specific phenomenon. This might seem practical in the sense that inclusion in a broader diagnostic group would tend to shove out of focus current studies regarding its developmental and symptomatic peculiarities. At all events, it seems advisable to keep in mind the specificity of the syndrome, regardless of any preferred nosological allocation.

ETIOLOGICAL CONSIDERATIONS

The first 100 autistic children seen in our clinic were selected for a consideration and statistical evaluation of the significant etiological factors. Of this group, 80 were boys and 20 were girls. The vast majority were of Anglo-Saxon or Jewish descent. As previously noted, exploration of somatic factors by means of complete physical and laboratory examinations has thus far furnished no clues that might point to specific acquired or constitutional organic anomalies.

Considering the 200 parents of these children from a genetic standpoint, it was observed that only one in the entire group had a major mental illness, a postpartum psychosis in a mother following the birth of her autistic child's older sibling. One mother and one father were alcoholics, and one was epileptic. One father, a prominent lawyer, had twice interrupted his college studies because of anxiety neurosis. Another father, a well-known scientist, had had convulsions in infancy and later showed marked digital tremors. Of the 400 grandparents, three committed suicide, two had unidentified "nervous breakdowns," one had Friedreich's ataxia, and one had an obsessive-compulsive neurosis. Of the 373 uncles and aunts accounted for, six had psychotic episodes, two were reported to be feebleminded, and one epileptic.

Among the children's own 131 siblings, 117 were considered normal. Of the others, seven had physical illnesses which were presumably unrelated. In addition to these, one was designated as a psychopathic personality, and two were severe stutterers. It is significant that three of our patients have siblings who, though not seen in our clinic, could be diagnosed as autistic children. One has, in addition, a brother who shows definite schizoid tendencies in his behavior.

These figures indicate that, from a genetic point of view, a meaningful positive correlation between early infantile autism and the occurrence of psychiatric or neurological disease in the patients' ancestry is unlikely.

The children in this series almost invariably come from intelligent and sophisticated stock. Among the 100 fathers studied, 96 were high school graduates, and, of these, 74 were college graduates. Their occupations included 31 businessmen, 12 engineers, 11 physicians, 10 lawyers, eight tradesmen, five chemists, five military officers, four writers, three doctors of philosophy in science and two in humanities, two teachers, two rabbis, one publisher, one forester, and one photographer.

Of the 100 mothers, 92 were high school graduates, and, of these, 49 were college graduates. Many continued to work after marriage. Their occupations included teacher, librarian, artist, social worker, writer, psychologist, physician, lawyer, chemist and others.

In considering the personalities of these parents, one may think of them as "successfully autistic" persons. This suggests the possibility that they may represent mild or latent manifestations, while their children show the manifest forms of the disorder. One of the fathers in this group, a physician engaged in research, described mildly schizoid trends in his grandparents, more severe ones in his parents and himself and a full-blown picture of autism in his child. These parents, as a rule, are cold, humorless perfectionists who prefer reading, writing, playing music or "thinking" to seeking out the presence of other people. They are polite, dignified, impressed by seriousness and disdainful of "small talk." They describe themselves and their marital partners as undemonstrative. Matrimonial life is a rather cool and formal affair. The parents treat each other with faultless respect, talk things over earnestly and calmly, and give to outsiders the impression of mutual loyalty.

The parents' behavior toward the children accentuates the emotional frigidity and mechanization of care. Maternal lack of genuine warmth is often conspicuous in the first visit to the clinic. Many of the fathers hardly know their autistic children. They are outwardly friendly, admonish, teach, observe objectively, but rarely step down from the pedestal of adulthood to indulge in childish play. Obsessive devotion to duty, rules and job serves most of the parents as a substitute for the enjoyment of life. At the same time their preoccupation with scientific and literary abstractions is accentuated by the large proportion of the parents and grandparents who have appeared in *Who's Who* and have attained considerable distinction in scientific, artistic and literary fields.

Autistic children could rarely be thought of as rejected children. Childbearing was accepted as a part of matrimony, but the parents did not seem to know what to do with the children once they arrived. They lacked the warmth which their babies needed. The children did not seem to fit into their established scheme of living. The mothers felt duty-bound to carry out to the letter the rules and regulations given by their physicians. They were anxious to do a good job, and this

meant mechanized service of the kind rendered by an overconscientious gasoline service station attendant.

Approximately 10 per cent of these parents do not fit the stereotype. In addition, those who do have reared other normal or, in any event, nonpsychotic children. Moreover, similarly frigid parents are often seen whose children are not autistic.

A control study of parents of nonautistic children revealed considerably lower levels of educational and professional attainment. Neither did they show the detachment, obsessiveness or coldness usually present in the parents of autistic children.

The dynamic aspects of the interplay between the patients and parents have been studied by a number of authors, and on the basis of these studies three viewpoints have emerged. One regards the parental behavior as a reaction to the child's peculiarities, and of no etiological significance per se. At the other extreme the parents, particularly the mother, could be considered the basic source of pathogenicity. The assumption is that a healthier maternal attitude would have precluded the disorder. A third group of investigators feels that the patient, endowed with an innate disability to relate himself to people, is further influenced adversely by the personality deviations of the parents and their resulting manner of handling him; this in no way discounts the possibility of a reciprocal relationship which, in turn, causes the parent to shrink from the child or to overprotect him in a more or less stilted fashion.

COURSE AND PROGNOSIS

It has now been possible to follow the destinies of autistic patients for a number of years, to compile data, and to reflect on the course and prognosis of the disorder.

In 1951 Darr and Worden[8] published a case report of a patient 28 years after she had been evaluated (at the age of 4) at the Henry Phipps Psychiatric Clinic by Drs. Meyer and Richards. Though no formal diagnosis was made, the child's behavior and the parents' personalities corresponded in every detail to the typical findings in early infantile autism. Dr. Meyer suggested "a natural, direct and affectionate handling without any pushing or undue demands." The mother carried this out by hiring a succession of different people to take care of the child. The child took piano and voice lessons, learned to speak Spanish fluently, and was able to take care of her personal needs. But at the same time she lacked any intuitive social sense, had temper tantrums when thwarted, seemed most comfortable when she lived by precise routine, and showed marked hypochondriac tendencies which caused her to go into seclusion when contact with people became too upsetting. On a home visit for the Christmas holidays there was an acutely psychotic exacerbation of her symptoms. Deep coma insulin and electroshock resulted in a brief period of remission. A second series, instituted because of a recurrence of her outbursts and occasional assaultive episodes, brought no improvement. After nine months of group and intensive individual psychotherapy, it was reported that she had established no particular relationship with either patients or personnel in the private sanitarium where she was being

treated. There was an apparent lack of relatedness to other persons, real or imaginary, in the content of her psychosis. The authors state specifically that "none of her productions has indicated delusional content."

This report represents the first opportunity to follow an autistic child into adulthood, and describes in detail "one example" of how such a person has adjusted over a period of years.

Mahler,[31] on the basis of her extensive experience with autistic children, wrote the following impressions regarding the course and prognosis of the "autistic infantile psychosis":

> Establishment of contact and substitution therapy over a long . . . . time may sometimes give spurts of impressive and gratifying results. But they are usually followed by an insuperable plateau of arrested progress, which usually taxes the patience and frustrates the renewed hopes of the parents. Impatient reactions and pressures are then exercised and progress forced. But, if the autistic type is forced too rapidly into social contact,—he is often thrown into a catatonic state and then into a fulminant psychotic process . . . If such catastrophic reactions cannot be avoided, it seems that such autistic infants are better off if allowed to remain in their autistic shell, even though in "a daze of restricted orientation" they may drift into a very limited degree of reality adjustment only. Diagnosis of their "original condition," of course, then usually escapes recognition; they are thrown into the category of the feeble-minded.

In 1955 Kanner and Eisenberg[28] published the results of a long-term follow-up study of 42 autistic children selected from those originally evaluated. They concluded:

> Every point of Mahler's statement was borne out by our follow-up studies: the spurts of gratifying results, the insuperable plateau, and the more or less permanent capsulation, occurring in different patients under different circumstances. Our findings suggest strongly that there are, from the beginning, differences in the intensity of autistic aloneness and fragmentation. We have as yet been unable to match them even approximately with somatic, genetic or dynamic factors which might possibly be held responsible. But they do exist and it would be a mistake to assume, as has been done sometimes, that autistic children are exactly alike in the manner in which, let us say, mongolian children are expected by some to be exactly alike. In this respect, a clear distinction between primary and secondary features proves of great value. Presence of the primary signs of aloneness and insistence on sameness is a sure diagnostic guide and holds the group together, regardless of the number and nature of the secondary manifestations.

The children ranged in age from eight to 24 years, with an average age of 14 years. The interval between the first visit and the follow-up visit averaged eight and a half years. Of this group, none was reliably known to have had hallucinations or delusions. The main pathologic state was found in the area of inability "to relate in the ordinary way to other human beings." Even the relatively "successful" children exhibited a lack of social perceptiveness, perhaps best characterized as a lack of *savoir-faire*. This was illustrated by the following incident involving one of the patients. "Attending a football rally of his junior college, and called upon to speak, he shocked the assembly by stating that he thought the team was likely to lose—a prediction that was

correct, but unthinkable in the setting. The ensuing round of booing dismayed this young man, who was totally unable to comprehend why the truth should be unwelcome."

This amazing lack of awareness of the feelings of others, who seem not to be conceived of as persons like the self, runs like a red thread through our case histories. We might cite a four-year-old boy whose mother came to us with the account that on a crowded beach he would walk straight toward his goal irrespective of whether this involved walking over newspapers, hands, feet or torsos much to the discomfiture of the owners. The mother was careful to point out that he did not intentionally deviate from his course in order to walk on others, but neither did he make the slightest attempt to avoid them. It was as if he did not distinguish people from things, or at least did not concern himself with the distinction.

From a prognostic standpoint it is clinically useful to regard speech as an index of the ability to relate, or, conversely, of the degree of autistic isolation. It was observed that those patients who spoke by the age of five eventually demonstrated a far greater degree of social adjustment than those who failed to speak. Of the 42 children followed up, there were 23 speaking and 19 nonspeaking children.

In the speaking group the children had begun to talk at the usual time or slightly thereafter. Articulation was normal and phonation either normal or of a sing-song "Donald Duck" quality. Their rote memories were excellent, and the grammatical peculiarities described were in evidence.

Among the "mute" children the differences in speech development as observed in first and in subsequent visits were impressive. "Some of the patients had completely renounced the use of speech; they were either mute throughout, or began to avail themselves sparingly of the linguistic tool only after 5 years of age, or—having said a few words—abandoned articulate language altogether."

Eighteen of the 19 children who did not talk by the fifth year were "still firmly enveloped in their autistic shell and would, as Mahler pointed out, impress a casual observer as essentially feebleminded . . . It is necessary to emphasize that, in this group, the present condition has come about regardless of the manner in which the patients had been handled. In fact, 2 of them had received intensive psychotherapy in good treatment centers; in both instances, slight apparent progress had given rise to guarded temporary optimism." Only one of the 19 originally mute children has emerged sufficiently to attend public school. Of the other 18, seven were placed in institutions for mental defectives, seven were kept in their respective homes in a state close to biological helplessness, two were placed on farms, and two in psychiatric state hospitals.

The 23 speaking children fared somewhat better. Ten were reported to be doing poorly. Of these, five were placed in state hospitals, three in schools for retarded children, one on a farm, and one remained at

home. However, "most of them, even at the low ebb to which they have receded, still show remnants which distinguish them from the demented or pseudo-demented level of the mute autistic children." The remaining 13 had reached a plateau which allowed them to function at home and in their respective communities.

Of this group, one has completed high school, served two years in the military service, married and fathered a child, and is at present devoting himself to a career in musical composition. Another, who showed a special aptitude for mathematics and an intelligence quotient of 150, was able to attain a degree from The Johns Hopkins University in three years and is now pursuing postgraduate studies. Margaret J., whose case history has been abstracted, has graduated from college. The other 10 are attending elementary or high schools. All in this group are isolated, strange persons, who continue to relate well to objects such as books and blackboards, have few, if any, real friends, and still maintain a somewhat tenuous contact with reality. Because of increased accessibility they all have shown substantial increases in formal intelligence quotient ratings. However, considering the clinical picture as a whole, one would not be particularly optimistic about their future.

In a more recent publication, Eisenberg[14] confirmed these observations with an enlarged group of 63 children. The outcome was classified into three categories: "good (patient functioning well academically and socially); "fair" (patient able to attend school at about grade level, but distinctly deviant in personality); and "poor" (maladaptive functioning characterized by apparent feeblemindedness and/or grossly disturbed psychotic behavior). "Of the total group of 63, 3 were classified as having a good, 14 a fair, and 46 a poor outcome. Thus about 27% were functioning at a fair to good social level. . . . Of the former (speaking) group, 16 (50%) achieved a fair adjustment whereas only 1 (3%) of the latter (non-speaking) group did so . . . . So different is the prognosis in the two clinical groups that the thought presents itself that we may be dealing with two syndromes rather than one."

Despert[10] has suggested a correlation between failure to assume an anticipatory posture prior to being picked up in infancy and the degree of isolation in the child. Since this finding precedes the development of speech, it should prove useful as a still earlier prognostic sign.

DIAGNOSIS

There is no single pathognomonic sign in early infantile autism, but, taken in aggregate, the historical and behavioral features present so striking a picture that one should encounter little difficulty in making the diagnosis. The characteristic findings of extreme aloneness and preoccupation with preservation of sameness, becoming manifest within

the first two years of life, are invariably present. Other symptoms vary from case to case.

Deafness can be ruled out by proper otologic and audiometric examinations. Heller's and other degenerative diseases become evident with the passage of time. Aphasic disorders become separated clinically from infantile autism when children with the latter disorder use well formed phrases or sentences in emergency situations. Moderate or severe mental retardation poses more of a problem in differential diagnosis, particularly when the children exhibit behavioral oddities which bear superficial resemblance to some of the "secondary" symptoms often observed in autistic patients.

The various forms of childhood schizophrenia share with early infantile autism the loss of affective contact and autistic thinking. However, in other forms of childhood schizophrenia there is usually a later onset and a period of normal development preceding it. Communicational and affective perception are not usually as deeply disturbed as in the autistic children. In the broader schizophrenic group there may also be a wider variety of symptoms, such as symbiotic features, possibly because development proceeded further before the onset of the illness.

TREATMENT

If early infantile autism can be considered "the earliest possible manifestation of childhood schizophrenia," the follow-up observations of Kanner and Eisenberg[28] may then serve as a paradigm of the natural history of the illness against which therapeutic measures may be evaluated.

Although the more recent papers convey a general attitude of optimism in the likelihood of bringing about a remission by various therapeutic measures, a careful scrutiny of results suggests a remarkable similarity in the children receiving various treatment methods. This is shown also in the group, followed up by Kanner and Eisenberg, who received no extensive psychiatric treatment. For example, their figures of 27 per cent of children who were functioning at a fair to good social level shows a remarkably close resemblance to Bender's finding of a 25 per cent over-all improvement rate in her five-to-15-year study of 350 children diagnosed as schizophrenic between 1934 and 1946 and treated essentially with electroshock therapy.

We may conclude that, if we consider the cases in aggregate, about one third appear to be able to achieve at least minimal social adjustment, independent of the kind of treatment.

In the children showing improvement the considerable efforts by the school and parents on their behalf stand out as significant therapeutic factors. These children have been extended extraordinary consideration

by their teachers. They constitute a most trying group of pupils. School acceptance of behavior that elsewhere provokes rejection is undoubtedly of therapeutic value. As was pointed out by Eisenberg; "autistic children, if they have any potential for response, are in need of supportive measures which can reinforce their potentialities by creating the conditions for successful interpersonal relationships."

The future of these children cannot be predicted with certainty at this time. The ultimate evaluation of treatment efforts must await further investigation. However, the delimitation of the autisic syndrome and the follow-up research done so far have opened an avenue for well focused curiosity and therapeutic experimentation.

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THE PSYCHOLOGICAL ASPECTS OF ASTHMA IN CHILDREN

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Asthma causes so much fear and unhappiness to the child and in the home that it is not surprising that we need to consider the psychological reactions related to it. Children readily enrich every experience with phantasy and often make difficulties worse by unnecessary fears when they cannot understand what is happening to them. The asthma attack is a very special experience, and is more likely to cause emotional upset than an illness confined to an organ not so necessary to life. Fear and phantasy can prolong an illness and decrease the value of physical therapy, and the child and parents need a great deal of help to see the illness in the proper perspective.

If asthma occurs in a family in which there is a history of allergic illness, the parents may be unnecessarily fearful that the attacks will continue. They may not know that with modern methods of treatment most children do not need to live a life of chronic invalidism unless their attitude to the illness is wrong. Their expectation that the children will inherit asthmatic tendencies may increase the likelihood that asthma will develop. Fear and emotional stress may be actual triggers which precipitate an attack, even in the child who is sensitive to some specific allergen. Modern theories of psychosomatic illness suggest that in many cases of asthma, tension and chronic respiratory illness are more important than allergic sensitivity in determining the occurrence of attacks. In these it is of the greatest importance to understand the psychological factors which precipitate and prolong ill health.

Psychiatrists and pædiatricians in all parts of the world agree that a

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close relationship exists between mental and physical dysfunction in psychosomatic disorders. This close interdependence is seen clearly in the asthma-hay-fever-prurigo group. Specialists in allergy and psychologists must have a full understanding of each other's approach.

In our work all the children were referred by the pædiatricians of a large children's hospital. All had been fully examined and adequately treated physically over a long period. The cases were accepted for treatment and advice, and not as part of a research project.

In this clinic we shall refer briefly to the published work and clinical observations of other workers in the field.[9] For convenience, reference will be made separately to the somatic and to the mental studies, but the close relationship between the two fields is taken for granted even when, in the service of brevity, this is not stated. Some of the theoretical work, carried out on severe and long-standing cases, may suggest to us a helpful approach which can be applied by the family practitioner making an early diagnosis of the illness.

ALLERGY AND STRESS

Great advances have been made in the understanding of the physiology of the central nervous system and the changes in metabolism which take place in the cells and serous fluids of the body. It is in this field of study that advances in knowledge may help us to understand the mechanisms by which mental and physical stress can produce identical changes.

In psychosomatic illness there is close interdependence of psychological and somatic factors in the ætiology, the disease syndrome, and the reaction of the patient to the illness.

We are not concerned in this article with hysterical illness, but limit ourselves to those cases in which the symptoms of asthma are accompanied by physical changes in the chest, and may show some permanent form of physical ill health. Cases fall into four main categories:

1. First and subsequent attacks are an allergic response to special allergens. Future attacks may occur in situations in which these allergens cannot be detected. The same patient may at times be perfectly well, even when the sensitising agents are present.

2. The first attack may occur in the course of a bronchitic illness, or in the presence of infection of the respiratory tract or nasal sinuses. These children are not necessarily sensitive to allergens in the environment.

3. Some children appear to suffer an asthmatic attack in response to emotional stress in the absence of any physical predisposition.

4. In all types of children psychological problems can occur as a secondary reaction to the emotional stress which the illness produces.

A typical clinical response was seen in a very straightforward case.

CASE I. A normal but excitable child had suffered from flexural eczema, hayfever, and slight asthma from infancy. The paternal family history included a number of sufferers of the asthma-prurigo group. The conditions had become well controlled by the elimination of offending agents. The child showed no serious behaviour problems, but negative feelings for the mother were exaggerated. In a moment of crisis in an air raid, in order to exact instant obedience, the child was smacked by an angry and tense parent. This was not the usual method of management, and the child looked exceedingly frightened, and did not cry, but urticarial wheals developed instantly in the flexures, and an attack of eczema, followed by asthma, developed. This condition did not recur when diet was controlled and security restored.

PHYSIOLOGY

Allergy

Many of the children we see are allergic to specific sensitising agents which may or may not precipitate an attack of asthma. The word "allergy" is used to denote an altered cellular reaction through the presence of specific antibodies.

Urbach[21] stated "that allergy is to be considered as a condition appearing after sensitization sometimes even in utero—based on an antigen antibody non-toxic antigen." Allergens may be (*a*) *extrinsic*, such as certain pollens, dust, animal hair, and this type of sensitivity is thought to be either acquired or inherited. (*b*) *Intrinsic* allergy includes acquired reaction to infection, serum, abnormal biological breakdown products and chemicals and drugs introduced into the system. Coca[5] pointed out that allergens which cause wheal-like urticaria are accompanied by high blood eosinophilia and the presence of Prausnitz-Kuestner antibodies in the serum. The immunologically allergic person produces abnormal antibodies (reagins) in response to antigenic protein substances.

Some physicians in this and other hospitals no longer accept the hypothesis of allergy, as described, as a completely useful concept for the guidance of therapeutic procedure. They stress the greater importance of emotion, infection, exercise and so forth as the triggers which precipitate attacks, and they do not use skin tests to determine cutaneous sensitivities, neither do they attempt to desensitise patients.

The allergic reaction takes place locally, or in distant organs where the reagin fixed to a cell reacts with the antigen. Histamine is liberated and a chain of reactions follows, producing a specific bodily response. Histamine and related products act on the lining mucosa and the broncho-constrictor muscles. Small arterioles are contracted, and small venules and capillaries dilate, and the permeability of the capillary wall is increased. This mechanism is clearly seen in the production of an urticarial wheal.

The psychiatrist is not primarily concerned with physiological changes which accompany respiration, but in psychosomatic medicine these form an integral part of the process even when the asthma is precipitated by emotional stress.

The lungs are enclosed in the bone and muscular cage limited by the ribs and the diaphragm. The diaphragm and its innervation play an important part in respiration, and are called into use in the forced expiration of asthma. The intercostal muscles assist in the maintenance of postural tone, and are in a state of tonic contraction controlled by impulses from the ventral horn, from which their motor nerve supply is derived. Faulty habits of respiration and deforming changes in the chest wall can be treated by physiotherapy. The physiotherapist can do most good if she realises that these changes are not only skeletal in origin, but are signs of the chronic emotional tension typical of many asthmatic children. We shall refer to the hypersensitivity of many of these children, and we have noticed how over-ready they are to become muscularly tense and alert when faced with stresses which normally provoke only some small outward expression of emotional distress.

The presence of a respiratory centre in the brain from which impulses controlling respiration are thought to arise was suspected as long ago as 1812 by Legallois[15] and soon after by Flourens[8] in 1824. They considered that there was a compact respiratory centre on the floor of the fourth ventricle. Budge[4] in 1859 traced the connections between the vagal nerve and recognised its rôle in expiration. We now know that the respiratory centre is not a compact mass, but is a widely scattered organisation in the reticular formation of the medulla and therefore part of the primitive visceral brain and closely associated with other areas controlling the somatic changes which accompany instinctual expression and its concomitant emotions.

Neural connections have been traced which show how wide-spread is the cortical control of these primitive functions. Spencer[20] in 1894 performed animal experiments demonstrating that stimulation of isolated cortical areas produced changes in respiration. This was so when the frontal lobes and the convexity of the cortex in the presylvian areas were stimulated. Fulton[11, 12] described the neural connections from premotor areas in proximity to the areas mediating impulses via the extrapyramidal routes of somatic activity. These connections are therefore adjacent to the areas concerned in primitive reflex motor activities essential to life, such as feeding, progression, climbing and so on. Neural projections pass via the mid-brain area into the spinal cord in positions rostral to the motor representation of face, tongue and glottis. Stimulation of these areas instigates salivation, grunting and primitive vocalisation.

Autopsy findings by Huber and Koessler[13] were hypertrophy of the

broncho-constrictor muscles, and occlusion of the bronchioles by mucus plugs. This mechanical obstruction alone is unlikely to explain emphysematous changes which occur in some cases, but Post[16] recognised that increased exudation from mucous glands in the submucosa of the nasorespiratory tract can be precipitated by anxiety.

Carbon dioxide concentration in the blood stimulates the respiratory centre directly, and also acts on the receptors of the aortic and carotid bodies. The concentration of carbon dioxide in the blood stream is maintained at a person's own characteristic level. Changes in oxygen tension, although of vital importance, are not primary factors in the precipitation of an asthmatic attack. The respiratory centre responds to the alteration in pH value and the bicarbonate level produced by gaseous interchange in the lungs, and instigates a chain of chemical activities through the cholinergic reactivity of the cells.

The release of histamine in cellular damage, and probably in response to emotional stress, alters the cholinergic reactivity. Histamine and acetycholine derivatives act together and produce broncho-constriction. Epinephrine opposes this action, and its excretion results in broncho-dilation.

Broncho-spasm reduces the air way to the alveoli, and further occlusion follows swelling of the mucosa and increased secretion of mucus. In "bronchitic asthma" mucus exudation is excessive and is dealt with by a productive cough, but broncho-spasm is minimal. In "dry asthma" the combination of broncho-spasm and mucosal swelling produces an increase in residual aid, which interferes with the exchange of gases in the alveoli, giving rise to hypoxia and carbon dioxide retention. Both these changes tend to produce a rise of pressure in the pulmonary circulation which will eventually produce right ventricular hypertrophy, cor pulmonale and cardiac failure. The physical condition of these children cannot therefore be neglected even though emotional factors are of great ætiological importance.

INHERITANCE

For many years it has been assumed that allergy can be inherited. Michael Schwartz[18] in a study in Copenhagen examined a group of cases for the purpose of research on the problem of inheritance. He concluded that he had sufficient evidence to state that inherited factors can influence sensitisation capacity in animals, but the mode of inheritance is not definitely known. Atopic asthma on this basis of sensitisation appears to be an inheritable disease, and a genetic relationship is shown between asthma, vaso-rhinitis, Besnier's prurigo and hay-fever.

THE LITERATURE ON PSYCHOLOGICAL THEORY

Sigmund Freud[10] developed the psychoanalytic concepts of instinct and libido. The innate qualities of personality development become organised through the conflict between the individual's strivings for satisfaction of instinctual needs, and the demands of the environment to control them. The strongest demands arise from the need for self-preservation and have been grouped under the aggressive instinct; those concerned with achieving bodily satisfaction and the maintenance of relationships are grouped as sexual instinctual demands. The powerful instinctual demands of the infant frequently conflict with reality. Parental inadequacy and rejection, or inability to accept infantile emotional demands, form a bad emotional climate which may be part of the reality situation impinging directly on the developing infant. The need to gain and retain emotional satisfaction, security and love is the mental counterpart of the infant's basic physical need for air and food, and throughout development the individual will risk considerable impoverishment of personality development in order to retain these. In the first nine months of life instinctual needs are expressed in direct demands for primitive bodily satisfaction.

The infant distinguishes imperfectly the boundaries between its own body and the sources from which its satisfaction springs. Satisfaction or frustration of the demands is accompanied by physiological changes which are later interpreted as the emotional concomitants of these physical states. Repeated failure to achieve satisfaction may lead to repression of the original demand, and the instinct must then find some other avenue for expression. It seems possible that the experience of the physical concomitants of emotion might be so distressing that the child may avoid precipitating them. Conversely, in some organisms the physiological changes may be abnormal and determined by genetic or other constitutional factors.

The development of the personality and the capacity for enjoying contact with reality, and for making satisfactory relationships, proceeds through well-defined stages. At birth the infant experiences sudden separation and loss of tactile continuity (through its skin) with the mother. This sudden change occurs almost instantaneously with the need to establish respiration, which is frequently associated with reflex crying. The conflict between achieving self-satisfaction and coming to good terms with reality proceeds through experience, which at first centres round the mouth, supplemented by good general nursing care. During the second and third years the child becomes consciously aware of its relationship to others, and habit training and control of assertiveness become increasingly important. The essential step towards independence and maturation for eventual heterosexual independence is

taken when the young school child accepts its own sexual determination, and frees its relationship with the parents from erotic striving. Throughout all these stages of development the infant and child tend to fall back to earlier levels of physiological expression of emotional values if life is too difficult. Psychologists have paid a great deal of attention to this pattern in the production of gastro-intestinal and habit disorders, but have not always realised that breathing and other somatic functions are an earlier and more essential stage of adaptation.

Abraham[1] extended Freud's work with particular reference to character development, showing how the personality is modified by good and bad experiences, in each succeeding stage of development. Alexander[2] and Alexander and French[3] discuss the apparent parallelism between emotionally motivated bodily function and its physical expression; i.e., phantasies of incorporation might produce gastritis or retention-constipation and so forth. From this they developed the concept that somatic symptoms may be the normal physiological accompaniments of certain conflict situations.

Deutsch[6] stressed the importance of the occurrence of a specific somatic illness in infancy as a determinant of the patient's choice of subsequent psychosomatic illness. He thought that three factors must necessarily occur together: (1) an appropriate overt personality attitude to stress and emotional demands; (2) a compliant environmental situation the "attitude" can make use of; (3) the occurrence of a physical disorder affecting a specific organ in childhood.

Klein[14] postulates that the autonomic vegetative system can express symbolically, in terms of physical symptoms, the combined effects of inhibited aggressive and infantile sexual impulses. Also the infant, unable to verbalise or conceive its separateness, behaves as if it incorporates the feelings it associates with instinctual demand, into its own body.

Selye[19] discussed the part played by hormones, especially pituitary and epinephrine, in producing damage to a target organ. He postulates that pituitary secretion precipitates hormonal adjustment to stress irrespective of the kind of stress. A diseased organism is already subject to stress, and this may impair adaptability.

Dunbar[7] used the technique of longitudinal case histories. She emphasised the existence of a personality profile for each specific psychosomatic syndrome. She suggested that continuity may exist between hysteria without physical change and the final formation of organ neurosis, when an insoluble conflict arises between fight and flight.

Rogerson, Hardcastle and Duguid[17] studied a group of 30 children and concluded: "If we might be permitted to generalise from this small group of cases we might speak of an asthma-prurigo personality. The characteristics of this asthma-prurigo personality which our patients

have shown may be summarised as follows: high intelligence on verbal tests with a poorer performance ability, marked over-anxiety and lack of self-confidence, considerable latent aggressiveness and egocentricity." They raise the question as to how far some of these characteristics may be "the results of difficulties produced by the disease itself in the patient's relationship with others."

We have taken our case studies from 15 routine referrals to the Department of Psychological Medicine. No statistical analysis of data has yet been attempted, but they seem to be a typical sample of cases sent for psychiatric help. The following characteristics have been observed:

All the children are very sensitive emotionally and physically. They quickly resent even slight criticism, but do not show paranoid feelings, and are extremely intolerant of ordinary frustration. A minority react with open aggressiveness or behaviour problems, but the majority respond with increased negativism and emotional inhibition of a kind typical of this particular group. Their phantasies of bodily dysfunction are expressed in concrete symbolism, and when phantasies of emotional regression are present, they refer to states of extreme infantile or intrauterine dependence. They appear to be ego-centric because of their difficulty in tolerating the problems which must be overcome if they are to establish good affective relationships. All the children in this group are of good average or high intelligence.

CHARACTERISTIC BEHAVIOUR

Aggressiveness

Some asthmatics with allergic sensitivity develop robust personalities and adequate characters, and lead full, happy, normal lives. They show little tendency to seek secondary gain from their symptoms, and carry on with their work efficiently even when asthmatic wheezing is present. They learn to control themselves, modify their environment adequately and develop into stable marriage partners and affectionate parents. Each person has only a limited toleration for stress, but if the environmental climate is favourable, aggressiveness can be utilized in the fulfillment of good ego-drives and ambitions. A moderate degree of neurotic character structure does not prevent successful adapatation to reality. The following case history describes a child who benefitted from psychological treatment and is expected to develop satisfactorily.

Case II. Peter was referred at the age of 5 years, suffering from prurigo, hay-fever and asthma. This had been present from infancy. Both the mother and father and all his siblings suffered from allergic sensitivity and psychosomatic disorder. He had been ill frequently with bronchitis, pneumonia and pink disease.

The family life was happy; although the parents were tense and inhibited, they

were fond of their children. Mother had not found Peter a difficult child to manage, but he went through a phase of bowel negativism, and when his asthma decreased in frequency during psychological treatment, he was encopretic for a short time.

On discharge from psychological treatment, the following report was made: "He is making excellent progress at school, and is popular with teachers and pupils, although he prefers to play quietly on his own. He is rather rigid in habit, and fastidious over food, but in spite of minor obsessional character traits he can form a good co-operative relationship. He has occasional attacks of asthma, but is becoming confident and happy and less bound by the expectation of asthma in the family pattern. He is of good intelligence. His stolid steady behaviour, and excellent power of self criticism and concentration suggest that he is developing a stable independent personality."

If aggressive feelings are denied legitimate outlet, they may find unsatisfactory expression in neuroticism, or may be turned in against the offending self, producing punishment-provoking behaviour or illness proneness. The personality development may be impoverished by the introversion of aggressiveness, but by it the child protects himself from the risk of further alienation from the love of his parents. We shall see that in cases of psychosomatic asthma referred for psychological help the parents are often ill-equipped to help the child resolve this problem, and, given unfavourable constitutional factors, illness may be perpetuated as a conditioned reflex or altered somatic response.

When an infant in the first year of life experiences frustration, it expresses feelings of rage vocally or by making an ill-directed attack, clawing and nuzzling at its fist or the breast, or lashing out restlessly in its cot. The physiological changes which accompany rage spread to involve bodily functions which are not the site of the primary frustration. Breath-holding, fits as well as colic, vomiting, diarrhœa and generalised exhaustion may follow. We think that many asthmatic children become frightened of their potential capacity to regress to these more infantile or abnormal ways of expressing rage. Therefore they feel they must continually protect themselves from possible frustration which they cannot accept, and they thus form faulty patterns of relationship in an attempt to avoid this situation. More direct expression of aggressiveness becomes tolerated by the child who responds to psychological treatment, and the frequency of asthmatic attacks diminishes even in the presence of specific allergens.

Asthmatic children frequently develop phantasies which suggest that they associate the physical sensations of their illness and their hostile feelings in a very concrete form. Some children will describe and play out their phantasy of suffocation and pressure in the chest during therapy. The following case illustrates a typical phantasy.

Case III. Micky dreamed and painted incidents which developed into a story of an underwater diver, imprisoned in strong weeds at the bottom of the sea. Superficially this expressed his growing recognition that he felt strangled by his mother's over-protective attitude towards him, but was much too guilty to seek his independence. His attacks of bronchial asthma decreased. One day he brought a picture

of the cartoon figure "Mickey Mouse" below the surface of the sea, engaged in cutting a treasure "chest" free from the clutches of an octopus. When the octopus came to the surface, Mickey Mouse found that he was a "good fellow," and they enjoyed eating bubble gum together. Micky himself interpreted this story to another child attending the same group for therapy.

Every child needs to be assured of his emotional security through a satisfactory experience of mothering. This is conveyed through the tenderness and confidence with which the mother talks to the baby, and handles his bathing, feeding and general nursing care. Over-conscientiousness which covers an emotionally rejecting attitude does not convey the same good feelings, and the normal infant responds by restlessness and feeding problems. This early anxiety is one of the causes of subsequent failure to resolve the hostile feelings which will certainly arise when the child must accept normal discipline and control.

There are many reasons why mothers may find it difficult to accept a particular child in their family. The baby may be unplanned, or the mother may be unwell or unhappy in the postnatal period. The maternal burden is increased if the father is away from home, when there is economic stress, or if the baby interferes with the mother's wish to follow her own interests or work. Individual children have temperamental characteristics which clash or remind their parents of unhappy relationships in their own background. The mother or father may be faced with the necessity of helping their asthmatic child to resolve the same emotional problems which destroyed their childhood's security. They cannot do this unless they have been fortunate and resolved their own difficulties adequately. Some of the parents who bring asthmatic children for psychological help give excessive physical care, but express great hostility, and behind this façade lies their real personal need for tenderness and acceptance. Unfortunately this problem may spoil many adult relationships. We see family situations in which a man and wife with a history of allergic illness or other problems vainly seek to re-establish a mutually dependent relationship which is not sufficiently mature to support the stress of the child's psychosomatic illness. In this type of problem the child has to withstand the projected feelings of the parents as well as their overtly expressed hostility. This situation was revealed in a case in which the child was ready to accept treatment, but the parents resisted every effort made to help them.

Case IV. James was referred at the age of 7½ years, suffering from repeated severe attacks of asthma. His physical condition was poor, with postural and emphysematous changes. The unfortunate parents were absolutely tired out by being awakened night after night to attend to James. They were devoted and conscientious in their attitude to the acute phases of the illness. During treatment mother complained bitterly that father was unsympathetic and hard. He thought that his child was a weakling and was spoiled by the mother. Father was hard on James and tended to bully him. Mother continued to criticise all doctors, the hospital and in particular the Department of Psychological Medicine for their failure to help her. She became relaxed after ex-

pressing her feelings in this way, and James, relieved of the intensity of his mother's hostility, improved considerably. For the first time he had no attack of asthma during his summer holiday, and he became enthusiastic about school and pleased to be allowed to join the physical exercise class.

Father later accepted an invitation to come to the clinic. He opened the interview with an aggressive attack on the hospital and the child, in which mother supported him. When the psychiatrist did not retaliate, both parents began to argue between themselves, challenging each other with conflicting evidence of over-indulgence or insensitive strictness. The father then asked the psychiatrist to explain why the child was better at school and in the clinic than he was at home. He was reminded that many of us feel our problems most keenly in a home where we wish to show and feel only love. This released an explosion of confidences from both parents. Mother, as a child, had suffered from rheumatism, which brought her little sympathy from her own mother. She had experienced too little tenderness herself and felt, "Why must James be such a baby?" Father said he had been brought up in an institution and after a long illness had returned to school terrified. He had mastered his own fearfulness and inadequacy and did not see why James should not do the same.

Over-Dependency and Negativism

The asthmatic attack is a frightening experience, and parents know that it can terminate fatally. It is surely not a neurotic manifestation that children become timid and afraid of their illness, and that normal parents become weary of their burden? Many convalescent children need a great deal of nursing skill to wean them back to normal health, and are often temporarily difficult to deal with, but we find a qualitative as well as a quantitative difference in the asthmatic child's dependent attitude to the mother. In psychosomatic illness the child is frequently less difficult during real convalescence, and extremely demanding or emotionally negative in periods of relatively good health. Some parents indicate this in their comments.

Case V. Tony's mother said, "Of course I don't want him to be ill, but when he gets so worked up, I almost hope that he will have an attack and get it over. Then when he is better, I dread the time when I have to send him back to school, he becomes so difficult again."

Many asthmatic children are intellectually alert and enjoy the interest and orderliness of class room activities. They may become educationally retarded through repeated absences, during which time the rest of the class cover basic steps in formal school work. Their sensitivity to praise and blame makes it difficult for them to accept their educational problems, and recurrent illness can provide an escape unless the mother understands the emotional reaction and the teacher gives individual help to recover lost ground in school work. Although they enjoy class work, many little patients become wheezy and distressed in the free activity of the playground. The excitement and the exercise disturb them. The timid ones dislike and fear the open assertiveness of less inhibited youngsters. If only they can be helped to accept these feelings in themselves and in others, they become less over-dependent.

Unfortunately over-dependence is too frequently fostered by the mother's over-protectiveness, and it is extremely difficult to help parents accept advice to let the child take justified risks. They fear that they will be criticised for permitting a wheezing child to go to school or out to play, but their concern is often motivated by mixed feelings—a point soon realised by the doctor treating the case. Ian's mother demonstrates the mechanism by which excessive care over-compensates for rejection, and denies feelings of guilt.

Case VI. Ian's mother was always greatly over-protective and apparently devoted to her son. Her rejection of the maternal rôle gradually revealed itself in treatment. When Ian was well enough to attend school she was careful to explain the reason for her insistence that he should stay to school dinner, although he did not want to do so. She rationalised her wish to be free from him and return to full time work, by insisting that the journey from school to home was too tiring for him. Ian saw through this situation very quickly and was determined to go home and safeguard his dependent relationship with his mother by preventing her return to work.

Capacity for Maturation

If a particular child has to deal with intense problems in the realms of love and assertiveness, we should expect that his capacity for full mature heterosexual development might be impaired. It is clear that the sexual problems should not be thought of as specific symptoms arising from the asthma, but the psychosomatic process may impoverish the personality so widely that full maturation may not be achieved. The actual attack of asthma may come to have a neurotic meaning for the child, so that bodily functions and sexual feelings may seem dangerous. The asthmatic child's need for frequent attention fosters any neurotic tendency there may be to gain and hold the attention of one parent at the expense of the other. The particular quality of anxiety and dependency in the illness strengthens an erotic attachment to the mother. It is in this situation that any immaturity in the relationship of the parents may play into the hands of the invalid, prolonging childhood difficulties into adult life, and causing real distress in the marriage situation.

Case VII. Mickey suffered from bronchitis and asthma. His mother spoiled him and was afraid to exert normal discipline because she could not tolerate "tempers." The father was in the army during Mickey's infancy, and when he returned home made a determined effort to "toughen up" a spoiled baby. Father had been a timid child and found the army a threatening experience. He suppressed his fears, joined the paratroops and loved to brag to Mickey about his exploits. He was particularly proud of an incident when he stabbed an enemy soldier. He insisted that his son should accompany him to the boxing club. Before treatment Mickey could not criticise either parent, or recognise that he felt quite unable to aspire to his father's over-determined demands that he should become tough and masculine. In phantasy, Mickey interpreted his father's assertiveness as a castrating threat. He was always trying to creep into his mother's bed and almost literally thought of this as "turning father out." He needed a great deal of psychological help to extricate himself from

the effect of his father's projected feelings and wishes, and we had to help his mother tolerate his maturation through periods of difficult, defiant behaviour and harmless sexual curiosity and experimentation.

Chronic invalidism and neurotic disturbance are common in recurrent bronchitic wheezing. These children are often openly babyish and clinging, but improve physically and psychologically if infection is present and can be treated. Amongst them we find severe cases of neuroticism. The mother's over-protectiveness includes an element of over-valuation of narcissistic qualities.

CASE VIII. Joan suffered from bronchitis, catarrh and wheeziness from infancy. Her mother, maternal grandmother, and aunt also suffered from chronic bronchitis. Her mother identified Joan's "weak chest" with her own history of illness and minimised the possibility of inheritance from the father, who had hay-fever each year. Mother considered that Joan's trouble began at birth, when "the doctor saved her life by sucking mucus out of her chest." When bronchitis developed in infancy, "I knew Joan would be like me, and I felt sorry for her, I have never been able to treat her like the other girls, she is so delicate." (Joan actually looks very bonny, in spite of chronic respiratory catarrh.) The teacher instigated Joan's referral because the child missed so much schooling, and was inhibited, anxious and solitary when there. Mother identified herself with all these difficulties and explained that she herself could not come to hospital without asking her mother or husband to accompany her. Joan felt that she was unpopular at home and school, and that her sister did not like her because "she was always ill" (and took up so much of mother's time!). Joan's mother would not accept further appointments, but wrote, saying that Joan was "much better." Unfortunately this was not true; the mother could not accept psychological treatment for her child, since she herself was too deeply involved in the problem.

A group of five- to seven-year-old children demonstrated that the need for unnaturally close dependence is felt mutually by mother and child. They receive reassurance from each other, and fear that independence can be gained only at the cost of recognising latent hostility.

The children and parents waited week by week for the therapist to fetch them from the waiting room. The plan was for the parents to form their own group with the help of a psychiatric social worker. The children clung silently to their mothers' side, literally tugging them into the playroom. Some of the mothers made no attempt to encourage or reassure them, but asked, "Will you be all right?" or called them back to readjust hair ribbon or clothes. A number of children insisted on bringing parents into the playroom, long after they were familiar with the therapist and looked forward to their visit to hospital. After they had eventually separated willingly their reunion in the waiting room suggested that they had endured an enforced and miserable separation. The strong impression remained that this dependent behaviour arose from the mutual needs of child and parent, and that they resented the effort of the therapist to break it up.

TREATMENT

The family doctor has a great opportunity to give psychological help to the family at the onset of the illness. He may then be able to explain the nature of the psychosomatic problem in simple terms without producing too much guilt and anxiety. It is a great advantage in

cases of bronchitic wheezing to avoid the use of the diagnostic label "asthma." Parents who come from a family in which there is a history of allergic illness may be greatly relieved if given plenty of time to discuss their fears for their own children's health. Later in the illness the family will have more difficulty in accepting any suggestion that emotional factors play a part in producing the symptom; they may feel that prolongation of the illness has been due to their mismanagement, and also that they are being blamed for this. If the position is put to them early in the illness, they are most likely to accept their rôle as members of a team of people acting together to free the child from illness.

The method of history-taking is of immense importance. Too much direct questioning has to be avoided. Parents may deny the possibility of any emotional stress in the ætiology, but will refer to it indirectly in the descriptions of the times when and places where attacks occur. Acceptance of these remarks without comment or any indication of praise or criticism will make the diagnostic interview of therapeutic value, and start off treatment in an atmosphere of confidence. An outstanding feature of psychological work with psychosomatic illness is the uselessness of giving verbal interpretations of the patient's problem. They need emotional acceptance, and if advice must be given, it will be followed only when the parents are emotionally free to act. It may be necessary to see the father and the mother together on several occasions, and thus to demonstrate that one will not be played off against the other, and that the doctor is not attemping to allocate praise or blame to anyone.

When it is obvious that the child is over-protected, it is of little value to give direct suggestion that more freedom should be allowed. If the child is suddenly permitted unduly free expression of feeling or phantasy, he will become frightened, and asthmatic attacks be precipitated. The parents will feel that bad advice has been given. Progress is made slowly, and most successfully when every opportunity is taken to point out that the parents have been wise over some past good decision, so that they come to feel an increasing sense of their own adequacy and capacity to give affection.

The family doctor must be the one to whom the parents can turn for reassurance about specialist methods of treatment, but unfortunately psychiatrists still often fail to keep him properly acquainted with their method of treatment, and the part it should play in the total life situation of the child.

The decision to refer the family will often come from the doctor, and he must decide whether the child or the parents need psychological help more urgently. In doubtful cases referral to the children's psychiatrist or child guidance clinic is the most appropriate, for help can be

offered there to the family as a unit. Cases are frequently referred for this special help too late, and the difficulty of treatment is thereby increased. If the child requires physical treatment, a children's hospital with a psychiatric department may be able to arrange for both aspects of the problem to be dealt with on the same day.

Psychological treatment is usually carried out in hospital by a team of workers similar to those in the child guidance service. The psychiatrist and the psychiatric social worker co-operate in the treatment of mother and child. It is an immense advantage that most clinics have the services of an educational psychologist, and facilities are available for giving some special remedial teaching to the child when educational problems have arisen through emotional difficulties and absence from school.

The principles of full psychoanalytic treatment of children are well known, but many parents are not willing to bring the child for treatment every day of the week. Fortunately, the majority of children with asthma benefit very much from a modified therapeutic technique, based on the concepts of dynamic psychology, combined with special understanding of the physiology and problems of psychosomatic illness.

When a child and parent both attend for treatment, the child often improves rapidly at first. Great care has then to be taken to help the parents accept this situation which arouses their ambivalent feelings towards the treatment of the child. Until their own problems are relieved, they may have emotional reasons to resent and fear early improvement in the child's condition.

The following case illustrates one of the techniques used in interviews.

CASE IX. Tony suffered from asthma and prurigo. His mother came to the first interview and was exceedingly hostile when it was suggested that she could co-operate in psychological treatment. She told us that her sister's child had been cured by hypnosis, and demanded this treatment. We said that we were glad that the child had been helped, but thought that she would find Tony less difficult if treatment was not limited to relief of the symptom. For the next three interviews she criticised everybody, but finally said that Tony could come to the clinic, but she could not leave her job to attend. We agreed that this was a difficult problem, but said that we needed her help. She then told us that she could never help Tony. He could be a good boy to please everyone else, but seemed determined to upset her. We replied, "You feel he is especially difficult with you?" She answered, "You need not think I neglect him, he has everything he wants, even though I go out to work." This provocative statement was accepted. "You have to give this boy a great deal of attention, it is not to be wondered at that you are glad to have a little relief by going out to work." She then replied, "How could anyone keep their temper when they go out to work all day, and sit up with a sick child all night?" We agreed, "It is impossible to be good tempered, when you are so tired." Quite suddenly this mother broke into tears, and said, "You are the first people I have ever talked to who understand what I have to put up with." She then proceeded to tell us about many difficulties in her own life, and in a later interview said, "I have told them at work that I must come, Tony and I are in this trouble together."

Most cases of asthma can be treated at home. Modern drugs, including cortisone and ACTH, have proved their efficiency in aborting acute attacks. They produce an initial euphoric response which can give way to more serious physical and mental changes unless they are used with discretion, and their administration should be thought of as a serious medical step which can be life-saving in value. In children this treatment does not replace a thorough investigation of the total life-situation of the patient.

Asthmatic children are quite as likely as any other sick child to suffer emotionally from frequent or prolonged placement in hospital. A specific difficulty in this illness is due to the dramatic improvement which takes place in many instances as soon as the child is admitted to hospital ward, convalescent home or special school, but he may relapse when the time comes for him to be visited or sent home. It is less easy to desensitise such children to emotional upsets than to some allergens, and it needs considerable tact and understanding treatment of parents to enable them to accept the fact that their visits precipitate attacks!

The technique of giving psychological help in groups has special value for asthmatic children and their parents. The latter often cannot join a group without individual preparation, but when they are able to do so, they find immense relief in sharing their problems and feelings with other mothers who face the same difficulty. The children find this technique very helpful, since it provides them with an opportunity to tolerate "social stress" in a controlled environment. But they need also to work out their individual problems within the security of a dynamic relationship with the therapist leading the group. The mechanisms of group technique are not specifically relevant to the problem of asthma and therefore are not of special interest here.

Enough has been said to illustrate that this illness, perhaps more than any other, is not the exclusive therapeutic concern of any one group of doctors. Teamwork between the physician, the allergist, the pædiatrician and the psychiatrist is essential, and is greatly facilitated by a clear evaluation of rôles early in the treatment of the case.

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CONSTIPATION AND FECAL INCONTINENCE

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Most physicians are agreed that throughout the life span gastrointestinal symptoms may develop from emotional stresses. Some have reservations about this concept, since most of the lesions producing gastrointestinal symptoms are located in remote areas outside voluntary control. Not all physicians wholeheartedly accept the fact that emotional factors may produce somatic symptoms via presumed dysfunction of the autonomic nervous system.

The relation of constipation and fecal incontinence to personality factors is more widely accepted because defecation is primarily under voluntary control. In most classifications of constipation in children it is agreed that if an organic obstruction is not found, or congenital megacolon not proved, then the cause is psychogenic.[3, 8, 12, 15] The emphasis is on sphincteric activity, and it is suggested that voluntary retention of stool may appear after coercive bowel training or in severely disturbed children.[9, 14, 16]

The equally important effect on rectal activity of involuntary autonomic influences is often overlooked. These may produce changes in bowel function beyond the control of the child. There have been well documented studies in adult subjects of alteration in colonic function by various factors, including stress.[1, 2, 11]

Unfortunately, in children, whenever an organic cause for constipation is not demonstrable, either the problem is ignored or the child is automatically assumed to be voluntarily withholding stool for psycho-

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logical reasons.[4, 8, 13, 14, 16] Persistent constipation, with or without fecal incontinence, probably results from a variety of factors. No approach which concentrates exclusively on the treatment of a single mechanism has been consistently successful.

MECHANISMS IN CONSTIPATION

Pathology

Except for the typical findings in Hirschsprung's disease, no characteristic pathological picture is described for other types of constipation. In many cases of chronic constipation tortuosity of the sigmoid may result. This finding is not pathognomonic of, nor etiologically related to, constipation, representing merely a nonspecific result. Tortuosity results proximal to partial obstruction of any hollow viscus. It is observable in blood vessels in arteriosclerosis and hypertension, in the ureter draining into a partial obstruction at the bladder, in achalasia of the lower esophagus, and in partial obstructions of the small intestine.

Constitutional Factors

Although no pathological finding is characteristic of most cases of constipation, certain clinical facts point to a constitutional predisposition to this condition. On the same formula a few newborn babies are constipated, while most have normal stools. In certain babies the constipation persists irrespective of many manipulations in the formula. This occurs too early in life to implicate behavioral factors.

Constipation is often a familial problem. This might imply conditioning rather than genetic factors. In many instances, however, infants tend to be constipated long before home environmental effects could come into play.

Evidence is also gained from gastrointestinal motility studies. Certain wave patterns found in the lower rectum are presumably associated with water resorption, others with defecation.[5, 6, 7] Some persons consistently display the "constipation" pattern of frequent and large-amplitude water resorption type waves. Larger doses of drugs are needed to produce propulsive or defecatory patterns in the distal colon of some subjects. With acetyl-beta-methylcholine or Mecholyl even repeated administration of the maximum safe doses will not produce this effect in approximately 50 per cent of the population.[7, 10]

Diet

It is a maxim among many physicians that if a patient takes enough fluid and fruits, most cases of constipation will clear up. Unfortunately,

not enough attention is paid to the kinds of fluids and fruits suggested.

The chief fluid taken by children is milk. Because of its low residue and high calcium content it may constipate. The observations of the effectiveness of dried fruits and juices in constipation are without solid foundation. Many paradoxes have resulted from our limited factual knowledge. An older generation of physicians prescribed scraped apple for diarrhea, but the modern physician often prohibits all fruits, including apples, when diarrhea occurs. Similar inconsistencies can be found in the attitude toward bananas.

In many constipated persons the appetite suffers. Children with poor appetites often show a preference for milk. The persistent constipation thus leads to the intake of a more constipating food, complicating the management problem.

Stool Holding

An infant becomes capable of voluntarily withholding stool between six and 12 months of age. Parents often fail to recognize stool holding for what it is. They observe a child who grunts, turns red, and "squeezes." The early interpretations placed on this are virtually always that an effort is being made to have a bowel movement.

Bowel movement is accompanied by contraction of the diaphragm and abdominal muscles, and "bearing down" at the rectal sphincter. These same muscles applied in exactly the same manner are also utilized in holding back a stool. The only difference involved in the two actions rests on the lever principle. The feet must push against a firm resistance, coincident with the muscle activity just described, to pass stool in most cases. If not, stool retention may result. As an example, one need only remember the difficulty that adults have when they attempt a bowel movement on a bedpan. If the bedpan is so placed that pressure of the feet can be brought to bear on a footboard or some other object, the efforts are usually better rewarded.

This principle is especially important in the care of a constipated child. Mildly constipated children tend to be somewhat predictable in bowel movement. Either they have bowel movements at regular times at an earlier age than other children, or they can be observed to bear down. The mother is prone to start the toilet training of such a child earlier than if habits were less predictable. Nowadays, toilet training in most infants is conducted on a special toilet seat, with the child's feet dangling in the air.

Without going into the various additional psychological factors of "fear of losing the stool," or fear of the height, or resistance to being forced, it is clear that it is extremely difficult for the constipated child to have a bowel movement from such a position even when there is

desire to have one. Once he has accidentally discovered that it is possible to hold stool back, then he can voluntarily do so to avoid pain, or for emotional reasons. After repeated failure to answer the call to stool, constipation becomes worse through conditioning and because of lessening of the urge.

Encopresis

The rectum can be distended to enormous size by retained fecal material. The active water resorption of this region is also able to reduce a large volume of fecal material into a much smaller dry mass. Impactions of considerable size can be built up slowly, and the gradual accommodation will not result in the acute symptomatology that an obstruction of equal size would produce at a point higher in the intestinal tract.

As the rectum fills up with increasing amounts of material the water-absorbing mechanism becomes less efficient. Relatively liquid material from the sigmoid slithers around the large bolus of hard material without being adequately dried out and passes involuntarily to the outside. This form of fecal incontinence is called *paradoxical diarrhea*, or encopresis. It is too often subject to misinterpretation.

In a surprising number of cases paradoxical diarrhea is interpreted as true diarrhea. The children are treated with constipating agents, e.g., Kaopectate, which increase the symptoms. On the other hand, if the condition is correctly diagnosed, it is sometimes assumed that all children with the symptom are emotionally disturbed. While this may be true in some instances, fecal impaction and encopresis per se do not categorically imply that the underlying cause is emotional. Often the real problem of the impaction is overlooked while the physician ponders the psychodynamics.

Summary of Mechanisms

The mechanisms to be considered in the production of constipation are (1) a constitutional predisposition, (2) dietary factors, (3) difficulty with passage of hard stools because of failure to provide leverage, (4) the influence of pain and voluntary resistance causing stool retention, and (5) development of incontinence when the fecal impaction gets large. These factors are interrelated, and it is difficult to determine in any individual child which plays the greatest part or which came first.

Emotional problems are frequently apparent in the parents and children when constipation and failure in toilet training are associated. Whether the emotional difficulties represent the cart or the horse is not always clear. Although the mothers of constipated children are

often compulsive, hostile, and not genuinely warm people, and the children frequently passive and withdrawn, this is not always true. In addition, even with these personality types which have previously been described in cases of psychogenic constipation,[8, 13, 14, 16] one cannot always assume that because this is the most apparent factor it is the most important. It is wisest to approach each case individually.

MANAGEMENT

General

Many physicians treat "functional" constipation too casually. If allowed to persist, this troublesome symptom may cause emotional harm to the child and parents. On the other hand, emphasis on the emotional factors, with failure to offer any practical advice about the symptoms, may produce as much harm as a too casual attitude.

If the condition has ever been accompanied by the daily passage of small, hard, pellet-like stools, and if the initial examination reveals stool present in the rectum, one can be fairly certain without resort to barium enema that the condition is not Hirschsprung's disease. This has a number of practical values. Exposure to unnecessary x-ray as well as a potentially emotionally traumatic procedure is avoided. Also an uncertain mother is often less convinced if the doctor orders a test "just to make sure" than if he adopts a firmer attitude on the basis of his own examination. No great harm can accrue to a child over six months of age even if the diagnosis of congenital megacolon is temporarily missed.

The management of constipation can be divided into three phases. At the end of each phase corrections in the therapy or diagnosis can be made, depending on the progress made.

First Phase—Regulation

The objective of the first phase is the establishment of regular bowel movements. This is accomplished with the aid of medications and without the active cooperation of the patient.

An important prelude to this first phase is to clear up any fecal impaction. With the use of hypertonic phosphate enemas this has become relatively simple. Approximately 1 ounce for every 20 pounds of body weight, up to a maximum of 4 ounces, can be given. Enemas should be given in pairs, the second following the first by about one hour. One pair can be administered in the morning and another pair in the evening. By this method it is not necessary for the child to fast until the impaction has been removed, since the second enema of a pair results in clear returns when this is achieved. At The New

York Hospital-Cornell Medical Center Pediatric Gastrointestinal Clinic it has rarely been necessary to exceed four pairs of enemas or to resort to digital removal or oil retention enemas to attain the desired results. Only when the initial impaction is cleared can the ability of a child to have normal bowel movements be evaluated properly.

Once the initial enemas are completed, they are no longer necessary or advisable. In the early weeks of management the mother is assured, however, that she may give enemas up to once a week if there have been no bowel movements. Permission to use these is primarily a psychological crutch, especially for mothers who have utilized enemas in the past, so that they will cooperate with the instructions without fear. If the remainder of the therapy is adequate, the mother rarely has to resort to any additional enemas.

Whether enemas are required or not, the child is started on relatively large doses of a palatable mineral oil preparation such as Neocultol at the first visit. Neocultol, or any oily preparation, is used only in the initial management and is not advocated for the long-term treatment of chronic constipation. It is not advisable to train the patient to rely on any laxatives, and there is the danger with prolonged administration of mineral oil of interfering with absorption of fat-soluble vitamins. There is also the lesser danger of aspiration pneumonia.

A mineral oil preparation is selected for the initial therapy because it works quickly. Between one and three tablespoonfuls daily will produce regular bowel movements in almost any child. This convinces the mother and the child more graphically than will any number of explanations that it is possible to have bowel movements painlessly.

Two to three weeks after the first visit the situation should be reviewed. If the instructions have been followed, with poor results, the child should be investigated for an organic or neurogenic cause of obstruction. If the management has not been thoroughly understood or followed, then the procedure may be repeated. Display of genuine interest by the physician and adequate support of the mother and child in those early stages may make the difference between ultimate success and failure.

If daily bowel movements are reported at the first revisit, then the mineral oil in the same dosage is continued for approximately one month. Two changes are brought up for discussion at this visit. The mother is advised to give twice the usual daily dosage of vitamins at some point in the day furthest away from the oil administration. This is to assure adequate fat-soluble vitamin absorption while on the oil.

Secondly, the intake of milk or milk products is reduced to the equivalent of one pint of whole milk daily. It is suggested that fruits

such as melons, berries, cherries, plums, dates, figs and prunes be substituted for bananas, apples and pears. No other attempt is made at manipulating the diet. When the milk intake is cut down, a child usually begins to eat more high residue foods such as vegetables.

Second Phase—Motivation

The second phase begins after one month of continued success with mineral oil. During this phase the objective is the elimination of the laxative and the maintenance of regular bowel habits through training. Only in children above two years of age is this likely to be successful. In a child less than two years of age lower doses of laxatives are usually necessary on a sporadic basis until he is ready for toilet training. Above two years of age if there has been no previous success with toilet training, such training is instituted. In a child above four years of age toileting is discussed primarily with him.

The child should be permitted to sit either on a potty chair or some other contrivance which will permit the feet to press against a fixed resistance. In the older child, during discussion with child and mother, emphasis is placed on the child's responsibility. The mother is instructed not to go to the bathroom with the child or to check on his performance. It is suggested in all age groups that a regular toileting interval of 15 to 20 minutes be instituted at least twice daily. The time should be spent reading or playing, and it is stressed that performance each time is not necessary. It is more important that the regular habit be developed than that a bowel movement be had at each session.

At this time the mother's attitudes toward bowel habits and their possible production of hostility and resistance in the child are first discussed. In such a discussion one is essentially pointing the finger of guilt at the mother. By this time, by having gained the confidence of the mother through the regular performance of the child with mineral oil, her relation to the problem can be pointed out. Doing this at earlier sessions could produce resentment on her part inducing a possible unconscious desire to see the whole program fail in order to prove to the physician that he was in error.

In addition to discussion of parental attitudes and methods of training, at this session a three-month regimen is outlined. During the first month the mineral oil is continued at the previous dosage while training is started. During the following month the dose is gradually tapered until the patient is completely off the medication. In the last month before revisit no mineral oil is given.

One of the detergent stool softeners such as dioctyl sodium sulfo-

succinate* is also started at this visit. These should be prescribed in two to three times the recommended doses. They are innocuous and can be given over long periods of time. In our experience they are relatively ineffective in relieving symptoms during the early phases of treatment when obstipation has been of long standing, but are extremely helpful later by keeping the stool soft as the mineral oil is reduced. They are usually continued for approximately six months after the mineral oil has been stopped. A methylcellulose preparation may be substituted as a stool softener if desired.

At the end of the three months the clinical results are evaluated. If there has been failure, one must decide on the reason for this. In a number of cases the changes in medication are made too rapidly, and a repeat trial, with slower withdrawal of mineral oil, and reaffirmation of instructions to parent and child are sufficient to ensure success.

On the other hand, the fault may lie with a child who is basically hostile to the whole procedure. Such a child, cooperative on the surface, often resists giving up the important weapon in the manipulation of his environment which his difficulty represents. If one suspects that this is the case, this is usually a suitable time for the institution of psychiatric help. The pediatrician or general practitioner must be careful not to assume too great a role as psychotherapist if the response of the patient indicates a markedly disturbed personality. On the other hand, the patient need not be too quickly shunted to the psychiatrist. Certainly, he is not harmed if given the benefit of the doubt up to this point even if there is earlier suspicion that much of the problem is related to personality disorder.

Third Phase—Continuation

Success at the end of the second phase leads to the continuation phase of the management. By continuation is meant perpetuation of the stool habit. At this point it is usually wise to point out to the mother that there are individual patterns and that some children do not have bowel movements every day. As long as the child has acquired regular habits, failure to pass a stool daily does not necessarily lead to a return of the chronic obstipation.

The mother can be instructed that if the child occasionally reports many days without bowel movement, sporadic reliance on a dose of mineral oil is permissible. If this is used too frequently or if stronger laxatives are needed, analysis of what has gone wrong by the mother or physician is necessary.

A change in school hours or the irregular pattern of a vacation may

* Generously supplied to the New York Hospital-Cornell University Medical Center Pediatric Gastrointestinal Clinic as Colace by Mead Johnson & Company.

have produced hurried or infrequent attendance to the stool. The ingestion of increased quantities of milk may have produced symptoms. A child with constitutional predisposition to constipation may display a recurrence of symptoms at any time. The physician should be alert to all factors, psychological or otherwise, which may cause such a recurrence.

In a majority of cases these methods of management usually result in a fairly complete withdrawal of the difficult symptom for which the physician was first contacted. It has been necessary to refer for psychiatric aid only a small percentage of the patients seen in the clinic in spite of the fact that initially most of them have severe organic symptomatology, and there is a good deal of emotional distress in mother and child.

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JUVENILE DELINQUENCY

Medical Responsibility

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For the purposes of this symposium a definition of delinquency is appropriate, though it is realized that definitions vary, depending on the approach. Such a definition for our purposes can be stated as that status of a boy or girl coming into contact with the law because of some deviant behavior against society. Such a youngster may have misbehaved in a less serious way for some time, such as being rebellious at home, irresponsible and disturbing at school or uncooperative in community activities. Some of this behavior may have come to the attention of the police for warning. The first appearance in court may not constitute a delinquent act. Past activity and conduct can, in many jurisdictions, mitigate the situation in which the boy is brought before a judge for the first time. The Juvenile or Family Court has a broad leeway in deciding its procedures in most jurisdictions. In all decisions the reports of the physician, psychologist, social worker and others are most important contributions to judicial action.

CONTRIBUTING FACTORS

In attempting to give a comprehensive picture of the factors leading to delinquency it would seem that both extrinsic and intrinsic forces are involved. Naturally these are never clear-cut, and the same extrinsic factor does not produce the same reaction in all instances, just as in the case of exposure to an infectious disease. Some of the intrinsic potentials must have an extrinsic "trigger" to set them in motion. Poor adaptation to some of the simpler "habits" may be forerunners of more serious emotional disturbances, such as bedwetting, thumbsucking, eating behavior, sleep disturbances, and others. Volumes have been written

concerning these more or less innocent disturbances which ofter harass mothers.

Intrinsic Factors

It becomes, therefore, an important role of the "children's doctor" to explain carefully to the young mother the *nature* of a baby. His *three needs* are comfort and food and cleanliness. The *manner* in which these needs are met is most important. The physician then must be able to instill in the mother a sense of confidence and ability which in turn gives to the infant a feeling of trust. Apprehension, impatience and defeatism have little place in child upbringing. These are "mother problems" and very real, not only at the infant and preschool levels, but also during adolescence. This status of parent understanding, when attained at an early period, leads to disciplinary measures needed at later ages. Indulgence, not restriction, is the dominant characteristic of most parents. On the other hand, it is fundamental that excess emphasis be avoided, an observation of Oribasius (c. 325–c. 400): "Infants who have been weaned (at 2 years) should be permitted to live at ease and enjoy themselves; they should be habituated to repose of mind, an exercise in which little deceptions and gaiety play a part. . . . Those who at the period of weaning stuff them with food . . . will pervert their nutrition. . . ." Oribasius apparently dealt with the same kind of parent as do we!

A compilation of pediatric knowledge was brought up to date (1472) by Palus Bajelarbus and included some of our present adaptation problems, such as: "Parents are especially saddened as a result of bed wetting when boys . . . continually pass water in the bed . . . continually every night. This is said to be very base and in a measure unfortunate . . ." Metlinger (1490) made this observation: "Healthy children have good habits and do not complain. When children whine and cry they are unhealthy . . . one should consider their health . . . that they contract no bad habits." This pattern holds many truths applicable to the twentieth century. Additional observations were made by Oestereicher in the sixteenth century:

1. "Good mental habits are corrupted by bad habits in relation to food, drink, exercise, by what is seen and heard and by bad music." (Rock and Roll?)
2. "Inordinate mental emotion (audiovisual) in small children should be strenuously prevented, wherefore the nurse (mother) should be prudent and expert (understanding) as to the child's habits."

These axioms and observations made by these keen observers who had no psychologists to aid them and had little knowledge even of physical disease probably led Garrison to this definition of Pediatrics:

". . . the chief end of Pediatrics is the maintenance of the family and the perpetuation of the human race."

Extrinsic Factors

The extrinsic factors conducive to severe deviant behavior in many of our youngsters are broad in implication.

1. Migration of families at frequent intervals. Many youngsters find it difficult to give up old friends and acquire new ones. Some have difficulty at an early age, as evidenced by shyness. The stress of such is evidenced by poor school work or playing alone or the opposite of overt aggression. If such migration has taken place in moving from a rural to an urban community, the child finds his adaptation more difficult. Recreation, instead of being free, is restricted and regulated or nonexistent. To move into a different socio-economic or ethnic community creates an additional hazard.

2. Absence of one or the other parent in the home due to desertion, divorce or whatever cause. It is most difficult to create the atmosphere of home with only one parent, especially if the major income is lost. When the mother is left and has to work, an intolerable situation exists.

3. In the present era of the high cost of living some mothers are required to supplement income. Numerous other mothers are employed for various other reasons. There cannot be too great an objection should this begin when some stabilization has been acquired by the children. But to be left to the care of incompetent help or sent to a nursery at two or so years is questionable. May I quote our old colleague (Oestereicher) again on this point?

a. "Those who abandon their infants, . . . and give them to others to bring up, cut and destroy the spiritual bond and the effect by which nature binds parents to their children."

b. "You can tell that an infant has been sent away to nurse by its eyes; for the strong affection for the mother is slowly and gradually extinguished . . ." (Do you remember the "institutional" infant?)

At present no one has created a human being who can substitute for a natural mother or father.

4. At the opposite pole of family living are the well-to-do (and many of those in the middle income bracket) who think that "nothing is too good" and the more the better! Nor is the family always to blame —no opportunity is missed in the commercial field to stimulate unnecessary buying. This is exemplified at every holiday period, whether it have religious or patriotic meaning, thus subjugating the meaning related thereto. Such indulgences are not conducive to realistic concepts, despite the need for total economic welfare. When these luxuries

are prohibitive, owing to economic status, dishonesty and stealing are apt to spring up.

5. Not only in the economic field, but also in home discipline is this indulgence practiced. This pertains particularly to freedom at night for older but immature youngsters. Again both the extremes of socio-economic status are largely at fault. Few recreational facilities are available to the lower class and too much at higher social levels. Neither has a code embracing a so-called curfew.

Two age levels stand out rather prominently in the beginning of deviant behavior. The first occurs during the negativistic period of 18 months to six or seven years. Two adjustments have to be made here: one to family mores and the beginning of disciplinary measures of reasonable conformity and adaptation, and secondly to community and school life with the child's difficulty in understanding the changing world before him. The original negative (No!) attitude must be gradually changed to one of acceptance and enjoyment of cooperation. Pubescence ushers in the second phase of adaptation to maturity. This is accompanied by "growing pains" of both physical and physiological changes, as well as broadening emotional horizons. Physical growth accompanied by awakening of sexual realization poses a problem of opposite sex companionship for the first time. The desire for independent programs, personality assertion, rebellion at discipline, all may set up an argumentive atmosphere little different in its effect from the *No* age.

ROLE OF THE PHYSICIAN

There are many areas in this broad field of emotional disturbances and predelinquent manifestations in which the "children's doctor" can be of immeasurable value. Without going into detail, he has two roles:

1. Careful evaluation of the child who has vague symptoms difficult to evaluate on a purely physical basis. Many children who cause concern to the parent and to schools because of behavior should first be cleared of physical disease or deviant physiologic reactions. It is most unfortunate that a child be tagged with misbehavior when minor corrections can be made in eating habits, sleep habits, overexcitement, indulgences or overlooked inadequate attention and neglected apprehensions by the parents.

Problems of purely physical handicaps, such as crippling (arms and legs), congenital imperfections, and so on, may need much discussion with the parents and/or the child. To live with a handicap is the responsibility of both parent and physician.

2. Far greater problems exist in clinics, schools and the like where individual attention is more difficult. In these areas other personnel are

a necessity. Family background must be obtained by visiting the home and evaluating the findings reported by the social worker. Such information includes the physical status of the home, adequacy of food supply and clothing, number of children and sleeping arrangements, one or other parent absent for whatever reason, attitude of parent to child, and other pertinent data which might influence child reactions. If in school, the teacher may note fatigue, irritability and other reactions not regarded as falling in the range of normality. Psychometric evaluation is essential, pointing out the ability to learn—an ability depending in part on acuity of sight and hearing. Teacher, physician, psychologist and social worker make up the diagnostic team to determine needs for the future.

Prediction Data

The many factors having to do with incipient delinquency have been most confusing to all concerned. We are indebted to Sheldon and Eleanor Glueck of the Law School of Harvard University[2, 3] for two publications which stand out in recent studies on delinquency. In an attempt to duplicate the results published by the Gluecks in *Unraveling Juvenile Delinquency,* Maude Craig[1] in a report covering a four-year period has been able to show reasonable correlation with the Gluecks' prediction data. Craig's data appear to be close enough for promise of the Glueck "prediction scoring" to be of value to the physician dealing with children. Both have shown that it is possible to predict successfully a certain group of children having as much as 90 per cent chance of becoming delinquent, and by the same token it is possible to separate them from those with a 90 per cent chance of improvement in their behavior. The former group have been designated the "hard core" cases. With further data to define more clearly the "hard core" youngster and some clarification of language, it is possible that this "yardstick" can be used for orientation of physicians and in teaching in medical schools. This would create a large personnel capable of lightening the burden and pressure on an inadequate number of presently available psychiatric facilities. The Glueck study involved several hundred boys from an institution with an equal number of controls. Many psychological signs were considered which were then interpreted and assigned to five broad criteria (Table 7).

The definitions (revised June 4, 1953, in cooperation with Dr. Eleanor Glueck) for each social factor and the subcategories are as follows:

1. Discipline of Boy by Father:
   Overstrict or Erratic—Father is harsh and unreasoning; demands obedience through fear; or varies between strictness and laxity; is not consistent in control.
   Lax—Father is negligent and indifferent; lets boy do what he likes. Or boy has not lived with father at all.

TABLE 7. *Social Factors Prediction Table*[1]

FACTORS	WEIGHTED FAILURE SCORE
1. Discipline of boy by father	
Overstrict or erratic	71.8
Lax	59.8
Firm but kindly	9.3
2. Supervision of boy by mother	
Unsuitable	83.2
Fair	57.5
Close or suitable	9.9
3. Affection of father for boy	
Indifferent or hostile	75.9
Warm (including overprotective)	33.8
4. Affection of mother for boy	
Indifferent or hostile	86.2
Warm (including overprotective)	43.1
5. Cohesiveness of family	
Unintegrated	96.9
Some elements of cohesion	61.3
Cohesive	20.6

Firm but kindly—Discipline is based on sound reason which the boy understands and accepts as fair.

2. Supervision of Boy by Mother:
   Unsuitable—Mother is careless in her supervision, leaving boy to his own devices without guidance, or in the care of an irresponsible child or adult.
   Fair—Mother, though at home, gives or provides only partial supervision to boy.
   Close—If mother does not work outside the home and is not ill, she personally keeps close watch on the boy or provides for his leisure hours in clubs or playgrounds; or if she is ill or out of the home a great deal, there is a responsible adult in charge.
3. Affection of Father and Mother for Boy:
   Indifferent—Parent does not pay much attention to boy, but is not outwardly hostile.
   Hostile—Parent obviously rejects boy.
   Warm—Parent is outwardly sympathetic, kind, attached, even though in some cases overprotective.
4. Cohesiveness of Family:
   Unintegrated—Home is just a place to "hang your hat"; self-interest of the members exceeds group interest. This applies especially to the parents and to the older siblings.
   Some Elements of Cohesion—Even if the family group may not be entirely intact (because of departure of one or more members for purely selfish reasons), the remaining group of which the boy is a part has at least some of the characteristics of the cohesive family.
   Cohesive—There is a strong "we-feeling" among members of the immediate family as evidenced by cooperativeness, group interests, pride in the home, affection for each other—"All for one and one for all." This applies even if one parent, usually the father, has never been a part of the family group.

Since the "hard core" youngsters usually occur in the low socio-economic classes, they rarely are seen by the pediatrician in private prac-

tice. Their background of family behavior and disruption is not conducive to seeking a physician's advice. Emotional disturbances which persist may also lead to "delinquency" status with court action. Many of these occur in the upper socio-economic bracket. Parents in this area are more frequently overindulgent, neglect discipline and "cover up" for the youngster when apprehended. It is far more difficult to estimate accurately the numbers in this category. The latter group with only emotional problems are by no means immune to being led into the "delinquent" area by older youngsters with an already established pattern of illegal behavior.

In view of the remarkable decline in mortality from the acute infectious diseases and immunization against most of the common contagions, physicians dealing with infants and children have turned their attention to other aspects of child welfare. Among these are the congenital anomalies, malignant diseases, adolescence, mental retardation and the emotional-psychiatric problems. The average pediatrician and the general practitioner are in a most strategic position to cull these problems and to manage them up to the point of their respective capabilities.

SUMMARY

The many changes in our culture have made for a new "way of life" for most of us. While technological advances have created conveniences and leisure of untold benefit, our adaptation to these has not kept pace. The cost of conveniences and even luxuries appears to be more cheerfully accepted than that of good schools and community recreation for youngsters.

Some of the factors which have caused new environment producing unacceptable child behavior are (1) transportation—not only nationally, but also in communities; (2) rapid migration of families from city to city; (3) disruption of family cohesion, either by employment of both parents or separation; (4) lessening of family and school discipline during the formative years; (5) diversion of youngsters by visual and auditory communication that is excessively stimulating; (6) inability of families to adjust to the "high standard of living"; (7) pressures of adaptation to varied racial and ethnic cultures; (8) failure to inculcate into the young child the values of morality, integrity and honesty.

Recognition of asocial reactions from whatever cause must be made familiar to parents, physicians, teachers, nurses and social workers in order that this "team" can recognize incipient symptoms. Such recognition and the use of proper procedures can reduce emotional morbidity as well as delinquent acts.

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MASTURBATION IN CHILDREN

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Masturbation is an act of manipulation of the genital area, which may be accomplished by self-manipulation, rocking or rhythmic movements of the body, or by rubbing against an object to create friction in the area. All this results in erotic pleasure.

Any physician caring for children is aware of such indulgence in self-stimulation. I shall discuss masturbation in relation to the phases of growth of the normal child. It is much more common in boys than in girls, probably owing to the accessibility of the penis. In retrospect, as documented, one would be led to believe that practically all persons in some phase of their growth and development have experienced masturbation.

IN INFANCY

Masturbation is not uncommon in infants. In this early phase the infant is often observed to make rhythmic movements, with pelvic thrusts which gradually increase in intensity until a climax is reached. During this activity the infant perspires and becomes flushed, and his eyes become "glassy" in appearance. Kinsey,[5] in reporting on 17 male infants, observed orgasm to occur in seven. The orgasm was identical to that in adults with the exception of ejaculation.

Between five and six months—when prehension has been accomplished—the infant invariably handles or fingers his genitals in exploring his body. Breckenridge and Vincent,[3] Tausk[12] and Levine[6] all agree that such manipulation is purely orientational activity. According to some observers,[1, 8] however, "rocking" in infants at this age may be a substitute for direct genital manipulation, since its results achieve the same climax.

The act of self-exploration on the part of the infant, which is accepted by observers as a part of the normal growth pattern, is difficult for

some parents to accept. A common sight in a Well-Baby Clinic is the six- to seven-month-old child who sits on the examining table in the nude to await his examination. He is usually pulling at an ear or his hair with one hand and tugging at his penis with the other; he is ambidextrous and can switch hands and objects with great ease. Most mothers of today are unconcerned with such manipulations, but occasionally one will become slightly embarrassed and flushed upon the approach of the physician and will attempt to stop this activity. As a rule she is unsuccessful—the infant's hands act as though controlled by some unseen mechanism and invariably spring right back to pulling or stroking his penis.

This scene should certainly give the physician an opportunity to discuss with the mother her attitudes and feelings about her baby's act. Often the physician is able to dispel false ideas and myths that encompass genital handling or stimulation, and impart a different outlook and understanding to the parent. Much progress has been made in education and preparation of the parent by the physician, which has resulted in a decrease in fear and anxiety that such an early manifestation of sexual excitement will result in mental defectiveness, or imply a familial neuropathic inferiority.

Treatment

The management of this symptom in infancy requires a review of parental attitudes. This early activity pattern has a direct bearing on early infantile masturbation. Ribble[9] says that "the unmothered infant will stimulate himself with various kinds of rhythmical body activities if normal fondling and rocking are denied him." Attention and cuddling are difficult items to be given on order, but can be attained if the parents are so inclined. Scolding and spankings have no place in the management of this habit.

Physical evaluation should be made and treatment instigated to such local causes of irritation as ammoniacal dermatitis, vulvar irritation, eczema in the genital area, or preputial or clitoral adhesions. Pinworms have been implicated as an etiological factor in causing fingering and scratching in the genital area. Physical restraints are said[1] to be useful before the age of six months, but less so, and perhaps harmful, after that. Environmental stimulation in the form of playthings, such as rattles or brightly colored rings attached on a cradle "gym," may divert the child's attention and stimulate and direct his concentration elsewhere than upon himself. Bakwin and Bakwin[1] recommend medication with Benzedrine (0.1 mg. daily for the child under one year, to be given in the morning), since it tends to lessen sexual tension. This dose is gradually increased until a therapeutic or toxic effect is ob-

tained. They also recommend the use of Benadryl and Phenobarbital for the child who practices this habit at bedtime. I have had little experience with drugs as therapy for this habit, but have the same feeling as Oliven[8] that braces and drug therapy are purposeless.

From my observations in private practice and in the Pediatric Clinic, I feel that this symptom occurs in practically all infants, regardless of the perfection or imperfection of their physical hygiene. Self-stimulation in infancy is neither harmful nor significant of abnormality; the understanding of this symptom by parents has been the most influential and important factor in management.

PRESCHOOL AND SCHOOL CHILDREN

During the preschool age the child carries out the act of masturbation in an open but rather monotonous, stereotyped fashion, either manually or by rubbing the genitals against some object when tired, tense or frustrated. The act is associated with a definite pleasurable sensation; the child who verbalizes says, "It feels good," or, "It makes me warm all over."

The nursery school or kindergarten child, when mentally preoccupied listening to a story or phonograph recording, will often finger or handle his genitals. Many times the entire class may indulge in the act, which has resulted in some teachers asking that the class fold their hands in front of them on their desks prior to the story-telling hour.

The preschool child who has outgrown his clothes to such an extent that he is constantly pulling at the crotch in an endeavor to relieve the tightness or binding will, undoubtedly, have been introduced to the pleasurable sensation of stroking and pulling at the genital area. Such experiences as bicycle riding, banister sliding or rope climbing may result in further investigation of the pleasurable sensation which results from rubbing the genitals. It is not an uncommon practice among boys to manipulate themselves through a pants pocket (often called "pocket pool" by boys and adolescents).

The male is often satisfied to rub his penis against a mattress or pillow while prone, in order to achieve a pleasurable sensation, or he will insert it into cracks, knot holes or holes in furniture. One eight-year-old boy was seen in the hospital emergency room by me a few years ago with the complaint that he had inserted his penis into the opening of a small bottle; when his penis became engorged, he was unable to withdraw it from the mouth of the bottle. He became panic-stricken and went directly to his mother, who brought him to the emergency room for treatment and relief. Before this experience his mother was unaware of her son's participation in masturbation, though she and her husband had prepared him as to erection and the pleasant

feelings experienced from genital stimulation. He was embarrassed and guilty to have got himself into such a predicament. It was explained to him that such an act was not uncommon, but I am sure that he will never repeat the process with such an inelastic medium.

By the time children have become aware that manipulative stimulation of the genitals is undesirable and not approved, many are able to adjust to these demands and refrain from the act. Many others are unable to give up this practice, however, and engage in masturbation secretly. At this period, especially among boys, genital comparisons as to size and shape are made, and mutual masturbation is sometimes practiced among the group.

During the school age, girls often introduce small objects into the vagina and urethra such as crayons, bobby pins or the rubber tip of a pencil. This occurs much more frequently in girls than boys, who occasionally stuff a small object in the urethra. Shirley[11] states that fantasies, talks about sex, and pornographic "literature" may stimulate children sexually and lead to masturbation. The well adjusted child, who is happy and enjoys satisfactory relationships with his parents, will feel free to ask questions about sexual differences and for clarification of information offered by his peers. Once again, parents who have been prepared by their physician for such questions are able to give as much information as his age and intelligence can assimilate. The father can discuss with his boy the questions about masturbation in an informal, unthreatening manner, and clarify any misinformation which his son may have gleaned from his friends. The mother can meet the same need in a girl.

ADOLESCENCE

This particular phase of development brings about great physiological changes in the female and the male. Secondary sex characteristics become more pronounced, and the sexual drive becomes accentuated. The female is usually one and one-half to two years ahead (physically and emotionally) of the male of the same chronological age. The process of maturing varies considerably in persons of either sex, thus emphasizing the consideration of adolescents as individuals.

During this period masturbation is practiced by both sexes, but is most frequent in boys. According to Oliven,[8] "the frequency of masturbation in normal boys varies, the average range probably being two to twenty times a month . . . while the consensus is that less than one-half of all girls masturbate at some stage in the second decade." During this period of growth, masturbation is accompanied by sexual fantasy or imagery. Nydes[7] states that masturbation is almost always associated with fantasy of one kind or another; boys' fantasies are

usually erotic, and the "masturbator is able in the twinkling of an eye to be served by the most beautiful women in the world" or by some love object, usually some person of the opposite sex in his peer group. Girls' fantasies, according to Oliven,[8] resemble moderately eroticized daydreams rather than sexual imageries; they remain purely romantic (being admired, petted or kissed, or elopement). In the majority of instances this is a phase which normally passes and does not require treatment.

Masturbation is primarily harmful in emotional and moral spheres. Boys seem to be more affected than girls—especially in feelings of guilt—because of loss of self-control, and have fears of loss of manhood or weakening of the body because of the frequent loss of semen. The boy may withdraw from his peer group, be unable to mingle because of his fear of discovery, and his over-all social behavior as well as academic achievements may suffer.

Hurlock[4] states that the emotional effects of masturbation are far greater than the physical effects. In some boys psychosomatic symptoms are foremost: namely, dizziness, headache, fatigue and insomnia. Oliven[8] states: "There is evidence that the major source of these troubled feelings and psychosomatic symptoms lies in the manner in which these boys' early natural sex curiosities and childhood erotic stirrings were dealt with by environment; and, most particularly, in the factors which have led to their abandonment of childhood masturbation."

MANAGEMENT

In the attempt to understand why a child of preschool or school age indulges in the practice of masturbation, it is necessary to review parental attitudes and feelings. It can be pointed out that this stimulation of the genitals or the genital area is a natural phenomenon involved in the process of growth, which embraces not only the physical, but also the emotional, components of the total personality. Parents should be reassured that observers are in agreement that such experiences do occur in the normal child and that, to our present knowledge, they have no damaging effect on the body or the mind. Parental guilt often has to be worked through and understood before a constructive approach can be undertaken. Some feel that they have failed in their role as parents, while others, recalling their own difficulties in managing this symptom, endeavor to protect their children from this unpleasant experience. Shame, threats or corporal punishment have no place in the management of masturbation. Such means only intensify the feelings of guilt and resentment, and result in an increased masturbatory activity.

Bornstein[2] states that "feelings of guilt cause masturbation to be unsatisfactory. There is a circular mechanism in operation; lack of satisfaction in masturbation and resulting damming up of the libido causes further and excessive masturbation which is often considered as impulsive." Parental cooperation and understanding of this symptom are essential, since they are the two most important therapists in an attempt to help as well as understand the child. The simple statement by the physician to the parents to disregard the act of masturbation is often easier said than carried out. Parents cannot disregard something that is a problem for them. The child also becomes more involved in this dilemma, when no response is forthcoming from his parents in the way of understanding and guidance.

Because the child has a curiosity about his feelings and his body, his questions should be answered in an honest and direct manner by his parents. They should give him as much sex information as he is able to digest and constructively utilize for his age and intellectual status.

Physical hygiene and evaluation should be carried out by the physician, who can recommend treatment for such local irritations as might cause itching from smegma, phimosis, or intestinal infestations which result in anal pruritus. Schauffler[10] and Bakwin and Bakwin[1] state that circumcision is occasionally indicated; however, Schauffler[10] says, "In my experience (it) is not as apt to be helpful as has been indicated in the past . . . true itching is a rare complaint in the vulvar area in immature patients. Other sensations—or simply the urge to masturbate —may be incorrectly described as 'itching.'" Tight clothing or pants should be exchanged for a larger size, thus eliminating the focus of attention to the crotch or genital area.

Environmental climates can be altered for the young school child in an outlet for utilization of energy in work and play, so that he is tired and ready for bed at the end of the day. Sites for play should be selected to avoid cellars or attics, which sometimes lead to self-investigation and self-stimulation. Socialization with children of his own age should be encouraged, as well as group activities such as calisthenics or games which result in competition and good moral tone.

The adolescent who is involved in his own dilemma of physical and emotional growth requires sympathetic understanding and reassurance about his problem of masturbation. A sympathetic parent or physician can often afford tremendous relief to the adolescent, who can then discuss in a straightforward manner his feelings and desire for adequate sexual information. One will often find that he is well fortified with factual information about the harmlessness of masturbation, but needs affirmation from his father or his physician.

It is useless to persuade the adolescent to cease the practice of masturbation; it is better to help him organize his strength in the form

of self-discipline. VanderVeldt and Odenwald[13] recognize the special problems and difficulties presented by the adolescent, but conclude that such self-organization is essential in managing the masturbatory habit. Oliven[8] states: "Specific physical or medicinal measures directed at eliminating masturbation are rather pointless." Schauffler[10] and Oliven[8] are both at odds with the advocates "that a child should be encouraged to masturbate"; both feel that this is traumatic to the child's psyche as well as disrupting to the entire family.

CONCLUSION

1. The act of masturbation in the infant, child or adolescent is related to normal growth and development.

2. It is not injurious to the body or mind; however, it is not an acceptable act in our culture.

3. An essential factor in the management of this problem is the examination of parental attitudes and feelings. There should be education and de-emphasis of the false information and myths which encompass the masturbatory habit. Parental education in sexual development is an essential part of mental health guidance to be assumed by every physician who deals with parents and their children.

4. Masturbation will continue to be a problem to parents and children as long as fears, feelings of guilt and lack of understanding remain unchanged. Though the general prognosis is good, the habit cannot be dismissed.

5. The adolescent presents special problems and difficulties which require understanding, reassurance and encouragement for constructive use of himself in a self-disciplinary role.

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PROBLEMS OF THE ADOLESCENT

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Within the limits of this short clinic I can hardly hope to offer material regarding adolescents' problems which would in any sense be complete, but I hope by confining my comments to a few general principles to provide something of practical value. I should first like to offer a few comments about normal adolescents: their characteristics and their psychological conflicts; then to discuss a way of interviewing them; and finally, through brief case histories, to indicate ways in which adolescents' behavior and symptoms can express their underlying anxiety.

It should be made clear at the outset that it is the everyday problems, the behavioral difficulties and the psychosomatic disorders which are to be considered. These are the problems the pediatrician or internist or general practitioner frequently sees and can readily handle. Admittedly he will be more efficient and effective if he has had the advantage of some training and experience with this age group, or has the assistance of an experienced psychiatrist's support and supervision. We are not at all concerned here with the severe emotional disturbances: these are the province of the psychiatrist.

ADOLESCENTS' CHARACTERISTICS AND WORRIES

First a few comments about adolescents themselves, what they are like, their characteristics, the things which bother them and which cause them anxiety. These it is more profitable to understand than it is to focus on an understanding of what are sometimes referred to as their problems. After all, it is a person who has a problem, whether

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it be stealing or failure in school or disrespect for parents. There is little likelihood that the problem will be resolved unless one understands the person who has it.

Self-Concern

Fortunately adolescents literally force you to take this point of view: they demand that you pay attention to them, and ignore you, your advice and their appointments if you do not. This is because an exaggerated overconcern with themselves is one of adolescents' outstanding traits. They are intent on developing their own personalities, and quite indifferent to anyone who seems more interested in their ailment than in themselves. So in dealing with them it is necessary both to remember that their developing personalities are more precious to them than is the case with adults or little children, and also that they are very susceptible to those adults who show an interest in them. The interest, however, must be genuine; we must be more willing to listen than to advise; and we must make it clear that we regard them as people and respect them as individuals.

Concern with Growth and Maturation

Another characteristic of adolescents is their interest in their bodies. They regard minor blemishes seriously, and they expect their doctor to do the same. They do not like such matters, whether they be acne, a birthmark or a wart, to be shrugged off as inconsequential. They worry, too, about their growth and sexual maturation when either of these proceeds in an other than average fashion. Girls who are taller than their friends or are flat-chested, or boys who are short or slow to develop secondary sexual characteristics or who have small genitals, often become anxious. These people need repeated reassurance and their doctor's continued interest; and they need to learn that there is a difference between being abnormal and not being average.

Need for Recognition

One of the most important matters to remember when dealing with adolescents is that they are continually seeking prestige and recognition. To achieve these is to gain the confidence they badly need. But this often requires that they take part in activities which are strenuous and which will be in conflict with a doctor's prescription of rest. So we need to remember both how frustrating restraint can be and why they need to be active. Inactivity is not in the adolescent's tradition, and does not, for instance, permit the failing student to get com-

pensatory recognition at athletics or in any one of a number of other fields which his contemporaries feel to be important. It is a better policy to try to strengthen rather than to try to rest a tired adolescent. If they must be restricted, it is wise to try to offer some compensatory activity.

Capacity for Change

Adolescents have a great capacity for change: if there is anything constant about them, it is their mutability. Their attitudes and behavior patterns are not yet fixed, their emotional development is still far from complete, and those whose behavior or emotional status would justify pessimism if one were dealing with an adult should allow one to do no more than hazard a guess when dealing with an adolescent. Strong beliefs regarding their future, particularly when based on one or two visits, frequently prove to be embarrassing; tentative opinions and serial observations are much better.

Becoming Independent

Adolescence is a time of attempting to achieve independence, and no matter more frequently upsets parents and young people than their changing relationships to each other. When a parent is possessive or fearful and allows the son or daughter little freedom, and when by constant prodding and suggestion and supervision the parent gives further evidence that he or she has little confidence in this young person's ability to do for himself, there is usually an unhappy period of rebellion compounded by the adolescent's own lack of confidence in himself. Frequently it is the doctor's job to help this adolescent to build confidence, to interpret to him (or her) the reasons for the parents' anxiety, and to persuade the parents that their function is to produce an adult, not just a child.

Sources of Anxiety

Many other matters are sources of anxiety in the adolescent. School commonly upsets them. Just as his work, his business, can bring satisfaction or worry to an adult, so can school, their business, bring these to them. Often it is school that gives them a pain or makes them sick, so that questions about school are a most important part of their medical history. Sex, too, is disturbing. It takes time for adolescents adequately to adjust their behavior and their thinking both to this powerful drive and to the mores of their particular community. Menstruation may come without warning and be upsetting; and masturba-

tion, when treated with punishment or tinged with guilt, is often a source of anxiety. During this period some girls find growing up frightening, and make themselves unattractive by overeating or by persisting in tomboyish pursuits. Some boys, doubting their masculinity, will seek to prove it to themselves and behave in ways contrary to their nature. It is a time when they need, and will benefit from, opportunities to talk about these matters to an understanding adult who will take them seriously, who will be quick neither to criticize nor to advise, and yet who will be willing to give an opinion when asked to do so.

Religion, conflicts within the home, death, the misbehavior of fallen heroes, moving from town to town—all these may upset young people. At this time, when they are trying to stand on their own feet and become independent, it helps to have familiar things about them, to have some beliefs, to have old friends. They need strong, stable, warm adults, for whom they have respect and in whom they have confidence and upon whom they can rely, but who will not dominate them, to turn to. When old beliefs, old heroes, old friends fail them, they, not yet secure, may flounder badly. They protest that they can stand alone, yet as they break away from their family, they need to feel that there are these they can rely upon.

The Doctor-Adolescent Relationship

A knowledge of personality development is a great help to the doctor who is treating an adolescent, whether the disturbance is chiefly an emotional or a physical one. As the doctor develops a greater understanding of his patient as a person and does not merely regard him as a problem testing his diagnostic and therapeutic skill, the doctor-patient relationship will become more and more effective. Fortunately, whether the illness is mainly organic or emotional in origin, the adolescent usually responds to treatment more promptly than do older patients. This is due in part to the innate vitality of the adolescent and to the emotional state characteristic of most adolescents. Their turbulence is sometimes hidden, but it is there, ready to lend its force: it enhances their great capacity for change, and attitudes, habits, skills, hopes and fears come and go within a short period. The adolescent is close in time to infancy and childhood (states to which we all resort when we are ill), and so their emotional responses to sickness are apt to develop readily, but for the same reason they respond more readily to treatment than do adults. Another reason for adolescents' relatively prompt response to a doctor's interest develops out of the fact that the upset is often a product of a poor relationship to one of the parents. These young people are relieved when they find an adult they can imitate and whom they would like to please. When they find this sort

of person in their physician, improvement can be rapid. As a matter of fact, this tendency of the adolescent which allows him to establish a strong relationship with the physician is of value as a prognostic, as well as diagnostic, aid; when, under favorable circumstances, this kind of relationship develops, one is justified in being optimistic.

THE OFFICE VISIT

It is of no less importance to apply the preceding comments to the manner in which you conduct your office visit with the adolescent boy or girl than it is to apply them to the interpretation of a symptom or a problem. Adolescents are different, and, if one is to be effective, they must be handled differently than one would treat a child or an adult. Now they are old enough to have their own doctor, whose success will depend to a considerable extent on his making clear to his patient that their relationship is a confidential one. There must be no unnecessary compromise with this. To do this properly it is important to see the parents, both of them if possible, first, before one sees the boy or girl. At this visit it is important that they be told, and understand, why you will subsequently see the youngster alone. It is important, too, to make clear to them that he must understand why it is that he is coming in and that the reason he is given for the visit is the real one. Not infrequently parents will ask what reason they should give the boy or girl for the visit, and they ask whether it would not be best to say it is for "a check-up." It is always best to be honest, and if the reason is headaches or failure in school or broken windows or conflict at home, this is what the boy or girl should be told is the reason for the visit. These young people want and need to be treated with respect, and to try to fool them is to imply that you think them childish, to waste time, and to lose their confidence.

When these young people come in, it is important that they understand that this really is their own visit to their own doctor. They should be seen alone, the door is to be shut, they should have all your attention. To keep them waiting unnecessarily or without apology is evidence enough that you do not consider them important. They will benefit from your friendliness and interest, perhaps more than from your suggestions, and these you show in your manner, and in your questions about their activities and plans as well as about their particular complaint. It will help both to build this feeling, and also to avoid their dislike of authoritarianism, to sit face to face without an intervening desk. By avoiding unsolicited advice, a shocked expression, a critical glance, you increase the likelihood that they will trust you and tell you what is on their minds. By listening, by not interrupting, by resisting the temptation to interpret their behavior to them, and by

avoiding leading questions, you are most likely to form the kind of relationship that may later prove invaluable.

Not infrequently one is asked how one gets an adolescent to talk. Primarily one does this by being sure that one gives them the opportunity to do so; and one fosters this by being sure that the atmosphere is one in which any person is likely to talk, i.e., one in which there is privacy and friendly interest. Some adolescents who either quickly sense this or have much on their minds, start to talk almost immediately, and then it is well to keep them from saying too much at their first visit. Others, who are more anxious or not yet ready to face their problem, show this by shifting uneasily, by their glances at the books in your bookcase, and by their monosyllabic replies. It is best to give these young people more time and not to try to hurry them; with them it is a good procedure to start first with the review of systems part of the history. These familiar questions about headaches, dizzy spells, fainting, sleep, appetite, indigestion, cough, frequent colds, and so forth, are disarming, and lead naturally into simple questions about school and family life and jobs and hobbies and plans for the future. When this has been gone through, most adolescents will be relaxed enough so that your introduction of the main problem and your suggestion that they tell you about it will not be resisted.

There certainly is no one way to interview, any more than there is one way to treat, all adolescents. Some will want immediately to launch into their main problem, a few may refuse to answer even the most innocuous question. With these latter one might best go right ahead and do the physical examination with the hope that either in the course of it or when it is over, the atmosphere will become more friendly. The general principle to follow is that one must try at all costs to build a friendly, confidential relationship; it is definitely *not*, at all costs, to obtain this or that bit of information.

ILLUSTRATIVE CASE HISTORIES

With this much background it may be profitable to see how such characteristics as their overconcern with themselves, their striving for independence, their strenuous way of living, their capacity for change and their worries about such matters as their growth and development, sex, school, their changing relationship to their parents, and death, and conflicts within their homes, show up in certain case histories and influence one's way of managing their office visit, one's interpretation of their symptom and one's plan for their treatment. Certainly if the patient's personality and the sort of things which worry young people are ignored, it is unlikely that the etiology of the symptoms will be

clearly understood. What is often referred to as a strictly medical approach leaves a good deal to be desired.

Changing Feelings toward a Parent

At age 15, after several years of good health, Martha had a series of fainting spells and was admitted to a hospital for a period of observation which included an electrocardiogram, electroencephalogram, basal metabolic rates and various chemical studies. The results of all these tests were normal.

Her fainting attacks ceased after his hospitalization; so no treatment was given. Ten months later she had persistent midepigastric pain. This symptom was treated with various medications with intermittent relief, but then chest pain developed, and subsequently when the epigastric pain recurred, she was admitted to another hospital where chest and gastrointestinal x-rays were done. These were negative, and she was referred to our clinic.

At her first visit Martha complained that she had had pain in her stomach and had been unable to sleep well during the previous 8 weeks. When asked to describe her pain, she said that it was as though her stomach were tied up in knots. She was encouraged to talk about this, and to tell about her school work, her friends, her life at home. It was not long before she was telling of her confused feelings about her mother; she said she was ashamed of herself because at times she found herself hating her mother, and yet she knew that her mother was very good to her and that she did not really feel this way toward her. In one breath she would talk about her mother's thoughtfulness and kindness, and in the next she would complain of her mother's overprotection and lack of confidence in her. "I don't know what's the matter with me; this thing has got me all wound up."

It is obvious what had made her stomach feel as if it were tied up in knots, and when asked why she had not talked about these things to her other doctors, she said that they had just asked her about her stomach-ache and had been busy, and that she really had not talked to them very much at all.

Many adolescents go through this period of changing relationships and changing feelings toward each of their parents reasonably satisfactorily and without the development of behavioral difficulties or somatic symptoms. Others, for one reason or another, find this a difficult time, and their tenseness and anxiety manifest themselves in a variety of ways. In dealing with these young people, it is not the symptoms by which their anxiety is expressed that is important; what is important is that this kind of psychological conflict be kept in mind and be given consideration as a possible cause of the presenting complaint. If one has this in mind rather than only such somatic disorders as duodenal ulcer, a good deal of time and expense and heartache can be saved by the simple expedient of offering them the opportunity of telling you about themselves and their worries.

Reaction to Menstruation

Mary had had diabetes since the age of 9, which, fortunately, had been well controlled until a hospital admission at age 14. This admission had been necessitated by the sudden development of diabetic acidosis after an attack of frequent vomiting and menstrual cramps. There was no infection, and there had been no dietary irregularity and no failure to take insulin. During her hospital stay her vomiting was controlled,

her diabetes was carefully studied and treated, and she made an uneventful recovery. At her next menstrual period, however, she had persistent vomiting, diarrhea and severe cramps, and again went into acidosis. Again there was no evidence of any infection or dietary irregularity.

After recovery from this attack she was referred to our clinic for study. Here a careful history suggested that it was the reasons for her dysmenorrhea which required attention. Her early periods had been pain-free, but more recently, probably coincident with the onset of ovulation, she had been having severe cramps, and with these nausea and vomiting. The problem resolved itself into one of getting at the cause of this severe dysmenorrhea, and when the attention was focused on its possible causes, rather than on the diabetes, progress began to be made.

"No one really ever asked me about my periods before—well, nothing except how long they lasted and when they started." But given a chance to tell about them and particularly about her first one, which had frightened her very much, things began to improve. "It was awful; I'll never forget it. I didn't know what was the matter." It was clear that this girl's reaction to menstruation had a large and incapacitating emotional component. When she was given a chance to talk all this out, and to tell about her frightening experience, and given some support, interest and sympathy, and a better understanding of menstruation, her dysmenorrhea gradually lessened and was no longer accompanied by nausea, vomiting or diarrhea.

The part which conflicts regarding sex can play in adolescence can hardly be overestimated. Guilt about masturbation, rejection of femininity, and worries about homosexuality all need to be kept in mind. One source of anxiety, of particular importance to the pediatrician who sees younger children, is the matter of instruction about menstruation. Not infrequently this phenomenon occurs before a mother thought it would: "I can't believe she's that grown up." And when it comes on without previous explanation, it can be a frightening experience. Subsequently each period may be a time of anxiety, and the girl's attitude toward becoming feminine may be adversely affected. An inquiry into the circumstances of the first period may be much more revealing than information regarding later periods, their frequency and duration.

Concurrent Physical Disease

Up until her sixteenth year Sally had been in good health, but now she complained of nervousness, fatigue and inability to get to sleep, and her school grades, which had formerly been very good, were now poor. Her mother believed that something was bothering her, and took her to a psychologist who expressed the opinion that the girl had considerable hostility toward her mother and that this, coincident with her mother's surgical operation, had resulted in anxiety-producing conflicts. Psychotherapy was suggested. The husband, however, insisted upon having a physician's opinion.

Sally was a tall, attractive, alert girl who talked freely in a quite friendly fashion and without evidence of any tension. She mentioned several symptoms, but talked about them in an objective way, and all in all gave the impression of being a well adjusted person. She was given every opportunity to express hostility toward her mother, and this she consistently failed to do. As a matter of fact, it seemed clear that she had satisfactorily worked through this stage in her emotional development and now had a good-humored and friendly relationship with her.

At her physical examination, however, the story was different. She had all the typical findings of hyperthyroidism, and these were subsequently borne out by laboratory tests.

Even when one's patient is at a time of life when the changing relationships to either parent can be upsetting, and when some tests which perhaps indicate what is going on in the subconscious offer a tempting explanation of symptoms, it is well both to give weight to a clinical judgment based on a person's appearance and way of talking, and also to see to it that all these young people, regardless of their complaints, first have a careful, thorough medical history and physical examination.

Nevertheless it is essential to be sure that one has given these young people every opportunity to make their anxiety known, and has talked to them (it would be better said, listened to them) in a way which makes it reasonable to expect that emotional difficulties will be brought out. One has to be aware, too, of the possibility that the doctor may react to his patient in such a way that he will find it difficult to believe that this attractive or angelic-looking person, who has been suspected of having this or that emotional or behavior problem, could be other than happy and innocent and must therefore have a physical ailment. Prisons and mental hospitals are full of people whose appearance makes us wonder how they could be there, but this obviously is on the basis of a superficial acquaintance. On the other hand, when, after thorough acquaintance in the proper setting, one has the feeling that the symptom has more physical than emotional basis, one should not hesitate to pursue this even when some psychological conflict is present. There are few adolescents who do not have their emotional problems, and these need not cause a particular symptom.

The Adolescent Who Rejects Help, and His Need for Recognition

It is at times a problem to get an adolescent to visit a clinic or a physician, particularly if the problem is chiefly an emotional one. Some of them have previously had unfortunate experiences with doctors, some of them do not want to face their problem, some cannot stand the thought of there being anything wrong. Even more frequently it is difficult to get an adolescent boy or girl to accept help from a psychiatrist: they protest that they are not "crazy" and add, "What's the use of just talking?"

To these latter the pediatrician, internist, general practitioner or the medical clinic has much to offer. They have at their command a number of maneuvers which will serve to get a patient to them or which can be utilized to have a patient return for more visits, and those patients who are at first reluctant to return may lose this resistance after the visits which these various procedures have required. They may be willing to come back to talk over the results of routine laboratory work or to return for further observation of a bad knee, a painful back or acne,

for physiotherapy, or for more laboratory studies. Any of these may be used as means of getting these young people to return when it seems obvious that they might refuse to return "just to talk."

Sam came to us because his mother was deeply worried about "his inferiority complex, his inability to get along with his companions, and his gloomy mood." His father and mother were divorced, and the mother had custody of the children. His elder brother had had to leave college because of a severe emotional upset, and the younger brother was said to be a "behavior problem."

At his first visit this 16-year-old boy was suspicious, antagonistic and defensive. About all we could get out of him was that he had been told to stay out of sports and to wear a knee bandage. This he resented very much. He was obviously confused and badly in need of help. However, he was quite disinterested in returning for any future visits, and blurted out that he would not see a psychiatrist under any circumstances.

In the hope that after further acquaintance his defensiveness would lessen, his obvious emotional difficulties were not mentioned and, instead, a good deal of attention was given his knee condition. He was told that there was reason to believe that it could be helped and that there was a good possibility of his getting back to football if he would only accept treatment. He was willing to return on this basis, and on his subsequent visits, by keeping them brief, by not prodding, and by seeming to concentrate on his knee and his need to get back to football, we gradually built a relationship which permitted him to relax his defenses and then to accept help with his emotional problems.

This boy's need was for a stable, warm adult who could temporarily take the place of his father and offer support until he could stand on his own. His mother's anxiety about him had fed his own doubts about himself, and had further reduced what little confidence he had. His brothers' difficulties had just about convinced him that he was doomed to be the third member of an unstable trio. His knee difficulty, which later proved to be a blessing in disguise, was the straw which broke the camel's back.

These young people need success, they need applause, they need to be accepted by their own age group. Athletics offer them more prestige than does any other activity. For this boy not to be able to play football meant more than just giving up a game; it meant that he was deprived of success and recognition and the boost in self-confidence which these bring.

Their Need to Understand Their Illnesses, and Their Fear of Death

In dealing with adolescents, trite as it may seem to say it, it is important to remember that now they are grown up. When they are little, it is not necessary to give them much of an explanation of their illnesses, but when they are older, they are not only capable of understanding, but also will believe that we have little respect for them if we treat them as if we felt they did not. Furthermore, they have reached the time of life when they may become quite worried about their illness and may fear death. It not infrequently happens that an adolescent who has had an illness for some time has never had any explanation of it. The time when one ordinarily would explain the

illness is at the onset, and at that time this young person was much too young to understand; subsequently no one remembered to give an explanation.

Bill had had epilepsy since early childhood, but it had been reasonably well controlled by Dilantin, and he had had no particular difficulty until about 2 months before his first visit to our clinic. During that interval he had had 2 jacksonian seizures and after these, according to his mother, had been very moody and irritable. As his mother put it, "The seizures were bad enough, but it is dreadful to see him act this way; he is so worried and so depressed."

Bill obviously was worried, but in spite of it, he seemed to be an attractive 16-year-old boy and certainly did not give the impression of being by nature a worrisome, anxious type. He answered questions about his medical history intelligently and objectively. The most striking thing about him was his intense seriousness; he was obviously the sort of patient with whom one would not be facetious or try to jolly in any way.

He could hardly wait to talk, and so without our bothering to gather any preliminary information, he was allowed to go ahead and tell his story in his own way. At first he talked about the seizures he had had over the years, and then the jacksonian ones that he had had more recently. Very shortly he paused and said he guessed he might just as well tell what was really bothering him. Six months previously a friend of his had begun to have spells, and later had been found to have a brain tumor and at present was dying in a hospital. "It makes me wonder if I might have a tumor, too." He said he wanted to know all about epilepsy, "or whatever I have," and that he wanted to know whether he would die. When he calmed down a little, he got to talking about other things that had bothered him—his worries over athletics, about swimming, about getting married, about driving a car.

Obviously he could not be reassured very much at that first visit, but he was given to understand that he would be thoroughly examined, and that all his questions would be answered to the best of our ability.

Here was a boy who clearly showed the need to have explained to him the nature of various chronic illnesses, who illustrates the fact that death and a misunderstanding or lack of knowledge of their illnesses can be very disturbing to adolescents.

Failure in School

Of all the causes of anxiety in adolescents, perhaps failure in school is the most common. Questions about school are an important part of the adolescent's medical history. Failure in school itself produces anxiety, and a variety of anxieties may contribute to or may be the basis of the failure. There may be an inability to concentrate on anything except sex, or the failure may be the only means of defeating a domineering parent. Not all reasons for failure in school are emotional, however. There may be an intellectual deficit, there may be physical causes such as poor vision or poor hearing, there may be a specific language (reading, spelling or the like) disability. The important thing to remember is that school is a large part of these people's lives, furnishing them embarrassment or satisfaction, or frustration and defeat.

Harry had done well in school during the primary grades. He had been cooperative and pleasant, and such scholastic deficiencies as he had were overlooked. The summer before he was to start high school, he went again to be with his grandfather, whom he adored. His own father was a well meaning but weak and unsuccessful person, but his grandfather was robust, full of vitality, always on the go; it was he who had taught Harry to fish and shoot, who took him to ball games, who had taken him off on long trips, and who would bring him home late at night much to his grandmother's dismay. Suddenly that summer Harry's grandfather died.

Harry started high school full of enthusiasm. He was a good athlete and, although he was young, thought he might make the football team. He had more courage than strength, however, and a couple of weeks later his knee was sprained, and he was out for the season. This gave him more time for his studies, and apparently he needed it, since for the first time in his life his teachers did not seem impressed by his efforts. At first they were pleasant enough about it and just told him he would have to work harder. He did work harder, but the results were not much better.

His mother, who had always managed things at home, began to take hold and sat him down at night and worked with him. But his schoolwork did not improve, and before long Harry began to complain of headaches. This was not too hard for his mother to understand; she had never known him to spend so much time reading or to stay up so late studying, and she knew there must be something wrong with his eyes; so she sent him to an eye specialist for a thorough examination. She was a little annoyed when she was told that Harry's eyes were perfectly all right.

The headaches became worse, however, and it was not long before Harry was spending most of his school day sitting with his head in his hands. A month later he really was in trouble in school, and his mother decided to have him admitted to a hospital. There he had blood studies, skull x-rays, electroencephalogram, lumbar puncture, and so forth. All the results were normal, and he returned home. Some 3 or 4 weeks later, since his headaches persisted, he re-entered the hospital to have some of the tests repeated. Again the results were normal; so it was suggested that he go elsewhere so that still more extensive studies could be done.

When he was admitted to our Unit for study, it was with some misgiving on our part: apparently everything had been done and done very well. His anxiety was obvious from his first question: "Do you think I'll get well?" and fortunately his doctor answered this with an unhesitating "Yes." Then, just by the simple, natural expedient of asking where he went to school, the boy began to talk. This proved more revealing than the laboratory studies.

It was school that really was the trouble. It was not depression over his grandfather's death or disappointment over not making the football team, or a poor relationship to his father. These were contributing factors, but not the basic one. The primary factor was that the boy plainly did not have the fundamental skills in reading and spelling which one needs for satisfactory high school work. He had been passed along through the lower grades on his personality, but when faced with the longer reading assignments, a foreign language, and more rigid marking, he could not keep up, no matter how hard he tried. His reading and spelling skills were no higher than a fourth grade level. A popular, attractive boy, with no grandfather now to support him and no football to bolster his spirits, he was embarrassed, frustrated and depressed. The last straws were his mother's prodding and the implications that he might be a failure like his father. Once this boy's reason for failing in school was discovered and he could be assured that he could be helped, his anxiety began to diminish and his headaches went away.

Though it is true that school is a "headache" for a large number of young people, school does not cause all their symptoms. Their eyes and their sinuses still need to be looked at, but it is well to remember that failure in school can produce a variety of symptoms—all the way from breaking windows to indigestion—in adolescent boys and girls.

SUMMARY

In commenting upon these common problems of adolescents I have purposely avoided a review of the problems themselves. Valuable as it might have been to do so, I have not discussed, for example, the various causes of dysmenorrhea or of stealing. Instead I have tried to emphasize both what adolescents are like and ways of treating them which develop out of their worries, characteristics and needs, and also the need to remember the physical aspects of illness even in the presence of obvious and perhaps contributory emotional factors. I have done this because I believe it is more important to focus on understanding adolescents, their concern with themselves, their search for independence, their reasons for wanting to live strenuously, their capacity for change, and their worries about their bodies and sex and death and their changing relationships to their parents and school, than to focus on their disorders. To the question, "What do you do about stealing or rebellion or enuresis?" the best answer is, "What can you tell me about the boy?"

We all need to learn to understand these young people better. As we do, and if we treat them as people, not problems, then we are most likely to be able to help them with their basic, underlying difficulties regardless of their presenting symptom.

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EMOTIONAL PROBLEMS OF THE ADOLESCENT GIRL

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To understand the adolescent girl and her problems we need to know specifically what—or who—*is* the adolescent girl; and of course it is the word *adolescent* that requires clarification. It would be easy and tempting to assume that we all share approximately the same implicit definition of adolescence, but such an assumption might be misleading; in any event, time taken now to identify the boundaries and the content of that portion of the human life cycle will make easier both the presentation and the comprehension of the clinical material to follow.

ADOLESCENCE: TERMINATION

We all agree that adolescence in the female begins abruptly and dramatically with the menarche, and that it ends gradually as early adulthood begins. Establishing the time of termination of adolescence is difficult almost to the point of impossibility, and any generalization will be, to someone, controversial. Perhaps it will suffice to say that adolescence ends later than we formerly believed. It is widely held that adolescence—at least in this culture—is lengthening, and in part this lengthening is doubtless a result of our increasing technological demands. That is, it currently takes longer to learn the practical fundamentals of adult life than it did a century ago—for instance, a child can learn to ride a horse, but not until his mid-teens will he have the necessary judgment and capacity to learn to drive a car safely. Similarly, an 18-year-old could once comprehend the politics of her own small town, but now not even her grandmother can keep up with

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geopolitics. Our point is that adolescence, in the psycho-social sense, persists longer than it did formerly. We will be not far afield if we say that, for practical purposes, the blurred and indistinct line between adolescence and adulthood falls somewhere between 20 and 25 for the contemporary American female, and slightly later for the male.

ADOLESCENCE: DEFINITION

So much for the time-span of adolescence. The next, and more important, question is: What *is* adolescence? What is it that happens—or should happen—during these years? The word "adolescence," of course, means the process of growing up, and generally we take this to be the process of achieving adulthood. But it is more, for it is also the process of leaving childhood. In short, adolescence is the transition period which both separates and joins childhood and adulthood. The adolescent girl is forsaking the familiarity, the security, the dependence of girlhood, in favor of the independence, the responsibility, the maturity of womanhood. In the manner of all growing things she makes her way slowly; in the manner of the human being she does it sometimes painfully. With each step forward there is a backward look full of yearning for what used to be, and with each slip backward there is a forward look filled with aspiration for what might be. Her way is not made easier by our ever-higher standards for adult accomplishment, nor by our confused concepts of the role of the woman in society. She is expected to be a mother, and creative, and socially useful and productive, each to the point of perfection. She should be as slender and glamorous as a professional model, and she should be healthy and robust as an ideal mother. She must be equal to men, but not *too* equal, or she will risk her femininity—and she must at all costs be "feminine." On the other hand, as a girl she is carefully nurtured, reared, and protected from undue exposure to the world. She learns early that her mother has not achieved that perfection, but that she herself somehow must. She finds that her father, the first man in her life, does not entirely understand women or little girls, either, and is, in fact, sometimes confused by them, if not downright afraid of them. And finally, she learns that there are large aspects of life that are not discussed really openly, and that appearances are important. The idealized picture of womanhood is her goal, and for it she is given every possible preparation and blandishment and encouragement and admonition by her loving parents, who deeply and sincerely wish her well and hope she can make it. But nobody tells her *how*, nor shows her the way. As she grows and struggles and gropes for the answer to that "how" she is an adolescent. We know how difficult is her struggle, and we know the darkness in which most of it takes place. We are

not surprised at the frequency with which she comes to our professional attention.

THEORETICAL BACKGROUND

All of us are familiar with Cannon's concept of homeostasis, and it is as applicable to the psychology of the adolescent as it is to any other aspect of medicine. The emotional "system" of the adolescent girl seeks equilibrium, and her emotional problems are symptoms of dysequilibrium. The poles between which she balances are the extremes of childhood and adulthood: each attracts her, each repels her in ever-changing ratio as she makes her uncertain way from the former to the latter. Any force which pushes her forward too rapidly or holds her back too firmly gives rise to some degree of dysequilibrium; and it appears to matter little whether the force be internal, as, for example, the hormonal onslaught of puberty, or external, such as parental refusal to let an 18-year-old "date."

Not infrequently she is subjected simultaneously to excessive forward movement in one area, and oppressive inhibition in another. Further, her level of emotional homeostasis changes from time to time, stepwise, as she passes through adolescence. The consequence of this last point is that there are normal crises of adolescence which at first glance seem pathological, because of the degree of anxiety with which they are accompanied; but on closer examination it becomes evident that they follow the ripening of a new phase of growth which makes mandatory the establishment of a new equilibrium on a higher level of integration. The menarche itself is an example of such a normal crisis: its occurrence makes necessary the prompt establishment of a wholly new equilibrium, and often enough it is accompanied by a substantial degree of anxiety. Similarly, later in adolescence the girl becomes sufficiently mature to exist relatively independently of her peer-group, whereas previously she was thoroughly immersed in it. Again, tangible anxiety often accompanies the step upward to a new level of equilibrium. While these crises are normal and inevitable, seen in the light of growth, they nevertheless need frequently to be treated as though they were pathological, since they occur in a culture which holds all anxiety of whatever source to be abnormal. Faced by an adolescent girl with a presumably emotional problem, the physician has the task of diagnosing the problem, identifying the source of the dysequilibrium, and doing what he can to encourage a return to, or a step up to, equilibrium. Needless to say, he will have already dealt with the possibility of organic pathology.

Classification of the emotional problems of the adolescent girl presents difficulties because of the protean manifestations of those prob-

lems. For practical purposes, however, we can divide the problems into three main groupings on a basis of presenting complaint: problems of somatic nature, problems of deviant behavior, and problems of overtly psychological nature. We shall consider each of these areas, and illustrate them with representative clinical material. Our emphasis consistently will be on the practical management of these difficulties.

PROBLEMS WITH SOMATIC SYMPTOMS

Somatic problems doubtless account for most of the adolescent girls whose emotional difficulties bring them to the office of the physician. Most commonly one encounters symptoms referable to the genitourinary system, the gastrointestinal tract, the endocrinological complex, and the skin.

Menstrual difficulties make up most of the first group, and include every conceivable symptom from prolonged amenorrhea through all gradations of dysmenorrhea to alarming menorrhagia. To understand the psychological significance of menstrual disorders in the adolescent it is well to be aware of the fact that menstruation is the red badge of womanhood; and the adolescent girls who fear womanhood, or who feel unprepared for its complexities, are legion. Many of them express their fears unwittingly through their menstrual symptomatology. Perhaps the commonest such expression, and certainly one whose emotional etiology is most readily discerned, is the situational or reactive amenorrhea of the adolescent who has had intercourse or has approached it, or who—still naive—has simply been kissed for the first time. Perhaps more often than not the girl in this situation will miss her next period; usually she will experience a subjective sensation of swelling of her breasts, as well, and not uncommonly she will even complain fearfully of morning sickness.

In our experience early restitution of menses consistently follows reassurance—but *realistic* reassurance: little improvement can be expected to follow if the physician avoids the underlying fear in the girl, or too confidently assures her that she is not pregnant, for too often she knows quite well that she *may* be. However, if she is told that her syndrome is common, that symptoms of early pregnancy usually arise from the fear of the girl who has "transgressed," and that the frog test can be utilized, if indicated, as soon as the proper amount of time has elapsed, both her virtue and the frog's life will generally be saved within 24 hours. In terms of emotional homeostasis it is clear that such a girl has propelled herself toward adulthood too soon and too quickly. Perhaps her delayed or missed period represents not only a fear of pregnancy, but also a deep-seated wish to return to the safer physiology of her childhood.

Somewhat different in its psychodynamic aspects is the prolonged *amenorrhea* often encountered in the girl who is striving mightily for adult recognition in a job or in the intellectual pursuits of college. Frequently she is overeager to emancipate from a disordered home setting, and seeks respite in a rather precocious semblance of adulthood with a job and her own income. If in this fashion she approaches adulthood too rapidly in one direction, she may well maintain equilibrium by delaying her growth in another direction, by delaying sexual maturity with the consequence of prolonged amenorrhea. The effort to institute menstruation with hormone therapy, without first attempting to isolate and mitigate the psychological pressures pushing the girl forward at a too rapid rate, seems questionable.

Lucy, a college junior, is an example in point. After 4 years of normal menstruation she became amenorrheic on college entry. A highly gifted student, she rapidly established herself at the top of her class. Upon her return home in the summer her menses recurred, only to disappear again when her sophomore year began. The following summer she remained amenorrheic and at her mother's insistence sought medical help. After an exhaustive endocrinological work-up which revealed no untoward pathologic condition, hormonal therapy was instituted, and her menses appeared once again—the first period being scanty, and the second moderate in amount. At this juncture hormonal therapy was discontinued, and with the third period a month later she bled so profusely that her hemoglobin fell to 9 gm. Psychiatric investigation at this point revealed that the girl was exceedingly close to her mother and exceedingly displeased with her father, an alcoholic who made life at home most difficult. It was Lucy's plan to escape her father by achieving such a notable college record that a good job far from home would be hers for the asking. Devoting all her energies to this end, she remained physiologically very much the little girl, extending all efforts perfectionistically to an intellectual ideal. In this fashion she was able to maintain equilibrium, albeit an uneasy equilibrium, until her menses were re-established. After the profuse menorrhagia she once again became amenorrheic, and further hormone therapy was for the time withheld. With psychotherapy she became increasingly aware of the pressure which had been driving her too rapidly, and too one-sidedly, toward adulthood, and began to find ways to mitigate it. Mid-way in her senior year she requested the reinstitution of hormone therapy, with which the gynecologist agreed, and at the time of her graduation menses were regular, though scanty in flow.

A much graver prolonged amenorrhea is that which accompanies the lack of appetite and loss of weight in *anorexia nervosa*. Psychologically, this syndrome often appears to symbolize a sweeping and total rejection of femaleness. Once clearly established, it is a serious psychiatric disorder, and its treatment is slow and difficult to an extreme. As we all know, it is most dangerous in the long run to ignore the emotional roots of this disorder and to rely solely upon diet, vitamin supplements, hormonal therapy, and the like. Usually the pediatrician, and he alone, is in a position to accomplish the sometimes difficult task of early referral to a psychiatrist.

As has already been indicated, adolescent girls exhibit the whole gamut of *dysmenorrheas*; and again, in the absence of organic lesions, evidence of emotional dysequilibrium can usually be discovered and the

girl helped to a restitution of equilibrium. Not uncommonly, of course, organic lesions and emotional dysequilibrium coexist; and if this makes diagnosis more difficult, it may also be more interesting.

Frances, approaching her twelfth birthday, experienced the sudden onset of epigastric pain and vomiting, of such severity that hospitalization was necessary. Diagnostic studies revealed the presence of a duodenal ulcer, and suitable medical management was at once instituted. Within a week her symptoms resolved, but her incessant preoccupation with questions of sin and guilt convinced her pediatrician that the ulcer was secondary to emotional difficulties. About a month later Frances was readmitted to the hospital with the same history of acute abdominal pain and vomiting, and this time she was so seriously dehydrated that parenteral fluids were necessary. As before, her symptoms disappeared within a few days; but since her ulcer was not responding to medical management, her physician urged psychiatric evaluation, which the mother finally accepted.

Preliminary interviews with the mother at a psychiatric clinic shed further light on the girl's preoccupation with sin; for some time Frances had been asking her mother questions about anatomical differences between the sexes, and other questions concerning the difference between mortal and venial sins. The mother herself told us of her own fear of sexuality, and reported that she had always made repeated nightly investigations of Frances and her 15-year-old sister as they slept, "to make sure they haven't touched themselves." Frances was first seen in the clinic a month after her second hospitalization, and at this time she was again experiencing abdominal pain, which had been plaguing her for 2 or 3 days. In obvious distress, she held her hands tightly pressed against her abdomen with her trunk sharply flexed; she was pale and tearful, and had neither the intention nor the desire to talk with the therapist. However, she did answer direct questions with monosyllables, nods and shakes of the head, and in this fashion admitted that she was greatly and guiltily preoccupied with questions of sex. She had not yet experienced her menarche, and indicated that she knew little about the menstrual cycle. By this time, of course, the cyclic course of her pain and vomiting had become evident; her three bouts had occurred at a 28-day interval, and each had lasted 6 days. The supposition then was that the child was experiencing a sort of bloodless dysmenorrhea, and despite her clear reluctance to be across the desk from a psychiatrist, the latter offered her an explanation of her illness on this basis, along with a brief exposition of the facts of menstrual life, and some description of the shock of puberty and its bodily changes.

Frances was seen again at the clinic a week later, when she was free of pain and vomiting, but still noncommittal and even sullenly defiant. She quickly rejected the invitation to talk about menstrual matters, and was dismissed without further effort to talk with or to her. A similar interview occurred 2 weeks later, and the week after that the girl appeared for the last time at the clinic. Her last interview coincided with the time for her next "period." She had no abdominal pain or vomiting, but described slight discomfort in her breasts which she had first noted a day or two before. This time she smiled a little, talked willingly about her interest in sports, and said her mother was always overconcerned with the daughter's safety. She terminated the interview by saying she would not come again to the clinic "because I don't want to."

Follow-up reports from the mother and from the physician 18 months later indicated that Frances had experienced no recurrence of pain or vomiting, that her ulcer had responded to conservative medical management, that her menarche had occurred a few months after the clinic experience, and that she was currently an adequately functioning, although somewhat socially inhibited, schoolgirl.

If we consider the case of Frances from the standpoint of emotional homeostasis, it seems probable that she suffered principally from her mother's inadvertent efforts to keep her a child. Deeply and pathologically fearful of sexuality, the mother had not only failed to give the

child preparation for the menarche, but in addition had made it clear that she could not welcome the advent of adult sexuality in her daughter. But the hormonal onslaught of puberty made mandatory the forward step by Frances. The resultant of the two forces—the one backward, the other forward—was her cyclic pain and vomiting. Psychiatric management was directed toward reducing the strength of the mother's backward pull, both by counselling the mother directly and by providing Frances with the facts she needed. The result of that management, together with continued medical treatment of the ulcer, was a restitution of equilibrium within the newly adolescent girl.

Perhaps now we can leave menstrual symptoms and attend briefly to somatic symptoms referable to other systems. *Gastrointestinal symptomatology* is commonplace among emotionally troubled adolescent girls, often in company with menstrual problems—as in anorexia nervosa and as in the case of Frances. Such symptoms also occur frequently alone, however, and as with menstrual symptomatology, again we can expect all sorts of symptoms: undereating and overeating, nausea and/or vomiting, abdominal pain, diarrhea, constipation. The popular diagnostic term "butterflies in the stomach" appears to be obsolete, and now in its place one hears "I was clutched"; but the ability of the "stomach" to manifest anxiety remain undiminished and well known.

In the realm of the gastrointestinal tract we do not have a unifying symbol as clear-cut as that provided by menstruation, but there are at least two frequently encountered equivalents. First, the "body beautiful" represents adult womanhood, and the adolescent girl too relentlessly pushed toward adult achievement, especially in the social sphere, can and often does resist that pressure by almost compulsive overeating to the point of obesity. Second, patterns of eating and eliminating appear to be particularly prone to regression under an excess of pressure toward adulthood.

A college sophomore, tense and mildly depressed, complained that she could not stick to a reducing diet. A large-boned girl, she was 5 feet 6 inches tall and weighed 150 pounds. Her ideal weight, at least from the esthetic viewpoint of this observer, should have been not less than 130 pounds, but to this opinion she reacted with violent objections. "I have to be able to wear size 9 clothes!" That was her mother's size, and the woman's domination of her daughter was out of all proportion to her diminutive size. The mother had always bought her daughter's clothes and had a closet full of expensive and chic 9's for the girl, none of which the child could wear unless she had literally starved herself for weeks in preparation. But wear them she must for social occasions—which, incidentally, the mother held most important—because she was not allowed party clothes in a more appropriate size. All communications received by the girl from home were solely demands and imprecations that she lose weight in order to be socially presentable; the girl responded by eating more and more. The impasse finally gave way as the girl became slowly aware of her mother's efforts to maintain her own social prestige by showing off her ideal size-9 daughter. Killing 2 birds with one stone, the girl expressed her dissatisfaction with her mother, and her acceptance of a more realistic concept of her own physical self, by purchasing a moderately expensive and beautiful red dress which fitted her, and by charging it to

her mother. At the same time she began to achieve a beginning of control over her excessive eating, and later was able to resolve her intense rebellion against her mother with increasing comfort and a measure of self-respect.

College examinations and, more intensively, college graduation, are times of implicit demands for adult accomplishment. The predictable countermovement among adolescent girls of college age results in a plethora of final-week and commencement losses of appetite, nausea, diarrhea, constipation. As suggested before, successful management of such disorders begins with recognition of the forces and of the counterforces at work. Reliance in such instances on cathartics and enemas may result, at the end of four years of college, in a young woman needlessly dependent upon them.

So far we have seen that somatic symptomatology generally results from excessive pressure exerted upon the girl, or by the girl upon herself, to achieve adulthood; our one exception is Frances. This rule-of-thumb seems usually to apply: that somatic signs of emotional problems in the adolescent girl accompany undue forward pressure, and represent in one way or another rejection of adult womanhood, or regression to patterns appropriate to an earlier age. This appears to be as true of the occasional skin disorders arising from emotional causes as it is of menstrual and gastrointestinal symptoms. Certainly it is true of that common complaint, fatigue: What better way to resist progress than to feel too tired to work for it?

PROBLEMS OF DEVIANT BEHAVIOR

But there is another side to the equation: Many adolescent girls are victim not of too rapid progress, but rather of too little—whether it result from what they see as too many closed doors ahead or too much pull from behind. In either case, symptoms of dysequilibrium may appear in the guise of deviant behavior—at home, at school or socially at large. In the belief that such problems come relatively rarely to the attention of the pediatrician we shall pass them over lightly. Occasionally, however, he may be aware of early signs of severe behavior disturbance, and then his efforts at referral of the girl for adequate treatment may avert a serious storm later on. It will suffice to point out that such behavior problems frequently represent an impulsive and poorly organized effort to appear more adult than she feels, and to do it in such a way that a fair measure of trouble ensues for those held responsible by the adolescent for her lack of freedom to grow—most often, of course, her parents, her teachers, and even society as a whole. Such symptoms usually result from deeply disturbed relationships within the family, and restitution of equilibrium requires the concerted efforts of many dedicated workers in a variety of fields. Certainly such problems usually

fall outside the capacities and the responsibilities of the pediatrician alone.

PROBLEMS WITH PSYCHOLOGICAL SYMPTOMS

With the third group of emotional problems of the adolescent girl—those of overtly psychological nature—we are once again in our own medical bailiwick. Paradoxically, these undisguised emotional problems are probably more difficult to manage than are the others, which masquerade under cover of physical symptomatology. Here of course we encounter such presenting complaints as inability to concentrate, anxiety, depression, feelings of guilt, inadequacy or inferiority, as well as the frankly psychoneurotic and even psychotic range of symptoms. Generally this group appears in mid- to late adolescence, whereas the somatic complaints tend to appear in early to mid-adolescence. But just as before, the concept of homeostasis applies; and so long as we keep this in mind we can unravel many of the problems of these girls, too. We shall, however, spare ourselves a discussion of frankly psychoneurotic and psychotic manifestations, since these generally accede to ready diagnosis and referral.

Two weeks before the beginning of her senior year in college, Ellen, an attractive 21-year-old, the oldest of 3 children of eminently respectable and proper parents, announced her engagement and promptly fell ill with an acute outburst of anxiety. Extremely restless, she paced the floor, smoking countless cigarettes. She complained of insomnia, rapid heart rate, shortness of breath, trembling hands, and excessive perspiration—not to mention a decided lack of appetite. Understandably frightened, she and her parents sought medical help. She was hospitalized for a thorough diagnostic study, and all findings were normal. Placed on a regimen of mild barbiturate sedation and tranquilizers, she showed little improvement, and with the opening of college she returned, rather unsteadily, to the campus, only to be immediately hospitalized in the college infirmary. Her anxiety essentially unabated, she began expressing her need for help with an outpouring of tears, petulance and tantrums—childlike behavior certainly inappropriate to a college senior, and especially to one who contemplates marriage within a few months. At this point a college physician, familiar with the emotional comings and goings of college students, confronted Ellen with the childish explosiveness of her behavior and suggested that she attempt to find the origins of her illness in the realm of her own emotions. Ellen responded to this firm display of professional and human concern with tears of gratitude and began to consider the psychological framework within which her symptoms arose, consulting for this purpose the college psychiatrist.

As we noted earlier, her symptoms coincided with the announcement of her engagement. Her plan was to marry immediately after graduation. Recalling the first days of her illness, she remembered having been suddenly struck with a realization that her parents at home were not quite the respectable and proper citizens they appeared to be in public; further, their marriage—in her eyes—left something to be desired: actually, there seemed little contact and warmth between them. Each pursued different interests, all of which lay outside the home; both valued appearances above actuality; each of them Ellen saw, suddenly, as rather seriously hypocritical. She admitted that she had known all this earlier, but had not thought about it; and with the imminence of her own marriage suddenly she *had* to think about it, she had to open her eyes to her parents' marriage or—as she expressed it—"I'll just repeat all their mistakes."

Her anxiety appeared to reflect her understandable reluctance to face openly the human faults of her parents, and, as is always the case, her respect for her parents grew as she saw them increasingly clearly as people in their own right, with their own limitations and capacities—and her anxiety vanished.

In this case it would seem that the state of dysequilibrium arose when Ellen took the big forward step of planning marriage, but shunned the concomitant step of bringing her conception of her parents up to date. Initially highly anxious, as time passed without resolution, her behavior regressed to the childlike state previously mentioned. And, as usual, successful management followed identification of the emotional field of activity. Homeostasis was re-established, but on a higher or different or more mature level than had existed previously.

More common than such a dramatic display of anxiety is the subdued, low-key problem of mild depression, apathy, lack of interest, and inability to concentrate. An adolescent girl with such symptoms presents substantial difficulties for the physician because of her stubborn passivity. She says she does not wish to continue feeling the way she feels, but often shows no evidence of a real desire to change, to help herself. Most often such a girl feels pushed toward an adult life not of her own choosing, or one not fitted to her own capacities. For example, she may feel "sentenced" to a liberal arts college by parents who hold such an education all-important, when she would much prefer to be attending a music conservatory, or an art school, or the training program of a large department store. Her passivity, which may easily be self-defeating, is frequently a silent rebellion against parental pressure; its presence requires that the physician take the lion's share of the work of determining the conflict of interest between child and parent—and then, of course, of trying to convince the parents that the child deserves at least a chance to follow her own path. Needless to say, if the physician recommends to the girl a solution of *his* choosing, her passivity will be directed against him, and nothing will be gained.

THERAPEUTIC MANAGEMENT

By now it will be clear that, in our opinion, management of the emotional problems of the adolescent girl depends upon recognition of etiology and modification of emotional forces, rather than upon symptomatic treatment. This point deserves a special accent because of its importance: symptomatic treatment not only fails to alter the origins of the problem, but indeed often renders the total situation worse. Anxiety during adolescence, whatever its guise, constitutes a most valuable concomitant to growth, and any therapeutic measures which abolish anxiety without attacking its sources in effect delay growth, and are hence in reality antitherapeutic. Sedatives and ataractics should be used only

with the greatest reluctance, and then for the shortest possible time and in the smallest effective doses. Prescription of thyroid in the absence of thyroid disease—for instance, in order to facilitate weight loss or to increase energy levels—is at best a most dubious procedure, and drugs such as Dexedrine—again in the absence of clear-cut physiological indication—serve no good purpose. We do not wish to rule out adjunctive treatment; but we do wish to make clear the fact that, in the treatment of emotional problems, any pharmacologic preparation is adjunctive, and adjunctive only.

But if symptomatic treatment is generally contraindicated, then the pediatrician to whom these girls present themselves and their problems is called upon to spend time he can ill afford, in an effort for which he may not feel adequately prepared. The time he spends, however, in pursuit of etiologic factors represents usually a measure of economy; for more often than not the adolescent responds rapidly to such management.

To symptomatic treatment, on the other hand, she responds little, if at all; and the subsequent demands of patient and parent upon the physician's time may well become overwhelming. Seldom with problems such as these is conventional psychotherapy necessary; and when the need arises, it is usually obvious enough, marked as it is by symptoms of overt psychoneurosis, psychosis or grossly deviant behavior. Short of these extremes, the knowledge and experience of the pediatrician, coupled with his interest and curiosity, equip him for an attempt at management of the emotional problems of the average adolescent girl.

We come now to the crux of this paper. The pediatrician has received an adolescent girl and probably her mother. The history and physical examination alert him to the probability of an underlying emotional etiology, and let us assume that he is interested in attempting to manage his therapeutic problem in the fashion we have set forth. The first step will be to excuse the mother and the office nurse; most frequently privacy is of the first order of importance. The next step, as well, is the physician's; he should outline briefly and in language readily comprehensible to the patient his impression that her symptoms are secondary to emotional factors, and he should suggest what those factors might be. Here brevity may not constitute a virtue; it is better to suggest many possibilities, one of which might be partially accurate, than to rely on a single possibility which may fall wide of the mark. Having stated his case as clearly as possible, the physician can then ask his patient what she thinks of it; at this point she will probably accept it tentatively and skeptically, maybe even suspiciously, or she will reject it totally and uncompromisingly. If rejection is her response, perhaps the best course will be to fall back upon symptomatic

treatment and the hope that time will heal—as, often enough, it does. Such a patient can often regress, safely and temporarily, to a more childlike equilibrium, with respite from symptoms until she is better able to try her forward step at a later time.

The other kind of adolescent patient will in most instances respond to the physician's statement with one of her own which corroborates his formulation of her plight, or corrects it or refutes it with her own version of the source of the difficulty. In any case the way is open to further and more detailed identification of her problem, and in a majority of cases the simple act of talking about the underlying problem brings a reduction in symptoms. Of course one should not expect miraculous results in a single meeting of this sort: better to limit the discussion to 30 to 40 minutes and invite the girl to return in a few days or a week for another meeting of similar duration, and on the subsequent occasion to review briefly the substance of the first interview, and then to invite the patient to report any subsequent ideas or feelings or opinions she had experienced on the subject. If after three or four such efforts there is no visible improvement in symptoms, it is safe to assume that the source of dysequilibrium, whether it be at home, at school, or intrinsic to the patient, continues unabated, and referral to a psychiatrist is indicated. On the other hand, if improvement does occur, the girl can be excused with reassurance to the effect that she has met, identified and coped with one of life's many vicissitudes, that she will be able to do it again the next time it is necessary, and that with every growing pain there is an increment of growth.

CONCLUSION

It is not our intention to make of the pediatrician a psychotherapist, but for management of the more common and usually developmental emotional problems of the adolescent he is in perhaps a better position than is the psychiatrist who is a stranger to the girl. And it seems a shame to deprive the pediatrician of the warm rewards inherent in watching his adolescent patient grow emotionally as well as physically—and grow she will, given a chance. For she is an organism of surprising vitality, and she can tolerate burdens of anxiety and hours of sleeplessness and all manner of dietary irregularities and indiscretions, for short periods of time, with a reserve long since forgotten by her elders. In her emotional problems she welcomes a forthright, honest approach from the physician, and she generally distrusts anything that seems to her a kid-glove treatment. In the early years of her adolescence she is still enough of the child, physiologically, to erupt suddenly with frightening emotional symptomatology, and to recover as rapidly. She requires from the physician knowledge of her emotionality, patience, fore-

bearance, objective concern, an occasionally heavy hand with her or her parents, and, above all else, respect for her as the person she is—sometimes almost a child, sometimes almost a woman, most of the time a seemingly incomprehensible but endearing mixture of both.

SUMMARY

Emotional problems of the adolescent girl come frequently to the attention of the pediatrician or general practitioner. Symptomatically, they vary widely, but they arise from relatively few underlying etiologic factors. Comprehension of their etiology, in many instances, can lead to successful rational management by the psychiatrically untrained physician.

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NEONATAL CANDIDIASIS

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Although newborn infants are particularly susceptible to candidiasis, there is little agreement as to the incidence, pathogenesis, transmission and therapy of the disease. It is the purpose of this symposium to summarize our present knowledge of candidiasis in the newborn and to re-evaluate some of the traditional concepts.

PREDISPOSING FACTORS

While *Candida albicans* is frequently found as a saprophyte on the mucous membranes and in the intestines of older persons,[3, 6, 30] it occurs almost always as a pathogen in the newborn.[2, 29]

Although oral candidiasis may occur at any age, it is predominantly a disease of infancy. We do not know why the newborn infant almost always has thrush when *C. albicans* is present in its mouth, while several months later the child is able to resist this fungus. It appears, however, that a number of conditions commonly considered predisposing to oral thrush in the newborn are less significant than was hitherto assumed.

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Many factors such as prematurity, resuscitative procedures, birth trauma, prolonged labor, difficult deliveries, malnutrition, low birth weight, breast feeding and antibiotic therapy have been held to predispose newborn infants to oral candidiasis. None of these, although long accepted without challenge, was found to be operative in the series of cases studied by the authors. There was no significant difference in incidence between premature and full-term, overweight and underweight, breast- and bottle-fed infants or those with or without preceding antibiotic therapy. The incidence of the disease appears to be greater in the summer months.[24]

The same predisposing factors are not operative in all age groups. Therefore a distinction must be made between factors in candidiasis in early infancy and older age groups. In particular, it has been well established that antibiotic therapy predisposes to candidiasis in older patients, but in the newborn period this is not so. A number of predisposing factors such as leukemia, diabetes mellitus, hypoparathyroidism, malnutrition and avitaminosis are rarely seen in the newborn.

TYPES AND INCIDENCE OF CANDIDIASIS

The interest of clinicians has been centered mostly on the oral form of candidiasis. Cutaneous manifestations of the disease in the newborn

TABLE 8. *Incidence of Oral Thrush in Selected Groups of Infants*

GROUP	NUMBER OF INFANTS IN SERIES	ORAL THRUSH	
		NUMBER	PER CENT
Premature	87	3	3.5
Full term	2175	69	3.1
Breast fed	158	7	4.4
Bottle fed	2017	62	3.4
Antibiotic therapy	370	10	2.7
Cesarean section	36	0	0.0

nursery are frequently ignored or misdiagnosed, while gastrointestinal candidiasis is not fully accepted as a distinct clinical entity.

The writers were interested in the incidence of *Candida albicans* in the oral cavity of the newborn, and in the correlation between the presence of the organism and clinical candidiasis. Oral smears and cultures were taken from 2175 consecutive newborns, and *C. albicans* was isolated in 90 cases (4.1 per cent). In all these cases the organism was also present in the stools, and a high percentage of skin lesions occurred in combination with oral thrush. Routine stool cultures were therefore done in addition to oral tests in 520 infants. *Candida albicans* was isolated in 11 cases from the stools, but not from the mouth (2.1 per

cent). Eight of the 11 infants had cutaneous candidiasis in the diaper area while in the hospital.

In the course of these studies it was found that *C. albicans* can be detected in oral or fecal smears and cultures several days before oral or cutaneous lesions develop. This preclinical stage of the infection was termed "latent thrush" by Epstein.[8]

Table 9 shows the distribution of oral thrush, cutaneous candidiasis and "latent thrush" among the 101 infants from whom *C. albicans* was isolated in the studies outlined above.

TABLE 9. *Incidence of Candida Albicans in the Newborn*

	NUMBER	PER CENT
Total number of newborn	2175	100.0
Oral thrush	69	3.1
Cutaneous lesions only	12	0.6
Total cases of clinical candidiasis	81	3.7
"Latent thrush"	20	0.9
Total Candida albicans isolated	101	4.6

TABLE 10. *Reported Incidence of Oral Thrush*

AUTHOR OR INSTITUTION	YEAR	NEWBORNS IN SERIES	ORAL THRUSH		AVERAGE DAY OF ONSET	DAY OF DISCHARGE
			NUMBER	PER CENT		
Epstein	1924	2500	150	6.0	8	14
Ludlam and Henderson	1942	(a) 60	11	18.3	8	17
		(b) 2540	163	6.4	8	17
Anderson et al.	1944	107	20	18.8	8	13
Maimonides Hospital	1955	3600	36	1.0	–	8½
	1956	2175	69	3.1	6	8½
Beth El Hospital	1955	3500	5	0.14	–	6
Mount Sinai Hospital	1955	4000	20	0.5	–	5½

Table 10 indicates that the incidence of oral thrush reported to date has varied widely—from 0.14 to almost 20 per cent. Two factors help to account for this apparent discrepancy: variations in the day of discharge from the nursery, and in the intensity of the diagnostic study.

Oral thrush rarely manifests itself before the seventh day of life, as illustrated in Figure 6. For this reason, hospitals discharging their infants before the seventh day will report a lower incidence of the disease than those which discharge later. This factor largely accounts for the differences in incidence reported by the three New York City Hospitals listed in Table 10.

"The more systematically cases are sought for, the greater will be

the number that is discovered."[29] Routine oral smears done on every infant at Maimonides Hospital in 1956 led to the detection of three times as many cases of oral thrush as in the preceding year, when diagnosis was based on clinical methods only.

Cutaneous candidiasis in the newborn has been shown to be more common than was heretofore suspected.[4, 23] The condition occurs frequently as a concomitant of or sequel to oral thrush, but oral lesions

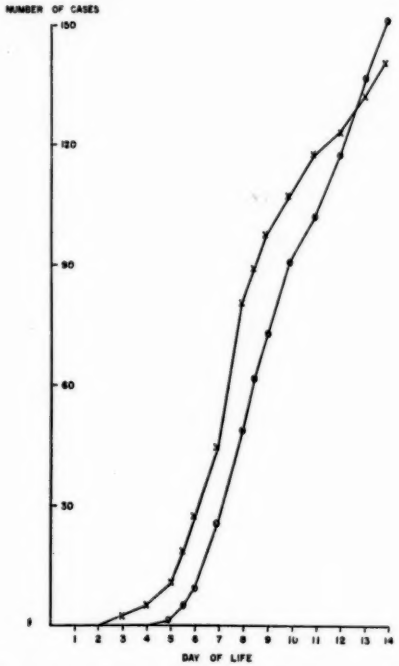

Fig. 6. Cumulative incidence of oral thrush during the first 2 weeks of life, according to Epstein[8] and Ludlam and Henderson.[29]

may be absent. In either case, *C. albicans* is invariably present in the intestine,[7, 17, 23, 35] and the contaminated feces appear to constitute an important focus of infection in the diaper area.

In addition to 12 cases showing only skin lesions (Table 8), cutaneous candidiasis was observed in 39 of 69 infants (57 per cent) with oral thrush. In six of these cases the skin lesions preceded the oral ones. In 75 per cent of all cases the skin lesions were noted during the first week of life. When oral lesions are absent and the condition is confined exclusively to the diaper area, *C. albicans* is not necessarily demonstrable in the mouth by laboratory methods.

DIAGNOSTIC FINDINGS

Oral thrush is commonly diagnosed only in the presence of extensive, white cheesy lesions on the mucosa. This picture already represents an advanced stage. Careful daily inspection of infants with "latent thrush" permitted detection of the earliest clinical signs of the disease. These consisted of barely visible papules, somewhat like hypertrophied papillae, which subsequently developed into tiny vesicles. The lesions enlarged, and adjacent foci coalesced into the typical "cheesy" thrush patches. The tongue felt dry throughout, suggesting hyperkeratosis of the mucous membranes.

Fig. 7. Cutaneous candidiasis of 24 hours' duration in an infant aged 5 days. Note anal focus and spread to adjacent areas.

The first clinical manifestations in cutaneous candidiasis usually consisted of maceration of the anal mucosa and the perianal skin (Fig. 7). From this focus the condition spread rapidly to adjacent areas. Small papules appeared on the glabrous skin. These developed into vesicles that ruptured, leaving characteristic erythematous white-collared patches. Intertrigo in the superanal cleft, the groin, and the folds of the neck, as well as paronychia, can be observed. In all our cases *C. albicans* was demonstrable by direct examination or by culture of scrapings from the lesions. Inasmuch as *C. albicans* is hardly ever isolated from normal skin or from skin lesions of other etiology,[23] the isolation of the organism from such lesions constitutes a valid basis for diagnosis and therapy.

LABORATORY FINDINGS

Candida albicans is usually detectable in oral smears from the third day of life onward, while clinical lesions rarely develop before the seventh day. This period of preclinical thrush is characterized by the presence of small numbers of spores (Y-form) which appear extracellularly only. Mycelia (M-form) are lacking.[35] This microscopic picture was seen consistently in oral smears of infants who harbored the organism, but did not exhibit oral lesions. The transition from "latent" to clinical oral thrush was signalized by an increase in the number of spores seen in direct smears, and by colonization of the oral mucosa with mycelium formation.

Candida albicans was found in 4.6 per cent of the nursery population studied, which represents only about one-eighth the incidence

TABLE 11. *Clinical Developments in 83 Cases of "Latent Thrush"*

	MYCOLOGIC FINDINGS	
	ORAL SMEARS OR CULTURES POSITIVE; STOOLS POSITIVE	ORAL SMEARS OR CULTURES NEGATIVE; STOOLS POSITIVE
Number of cases	75	8
Oral thrush only	30	0
Oral and skin lesions	39	0
Skin lesions only	6	6
No lesions at discharge	0	2
Total clinical candidiasis:		
Number	75	6
Per cent	100	75

reported for healthy older children and adults.[30] Furthermore, the presence of *C. albicans* in the mouth of an apparently healthy newborn permits prediction of clinical oral thrush with a high degree of probability. The organism occurs more frequently in the intestine than in the mouth, and its presence in the stools is correlated with a high incidence of cutaneous infection. It will be noted from Table 9 that 81 of 83 infants with "latent thrush" had oral or cutaneous candidiasis within a few days of the demonstration of the organism.

The delay in the appearance of clinical manifestations was found to be the greater, the less the number of organisms found on the initial smear. On the average, two to five days elapsed between the first demonstration of "latent thrush" and the eruption of lesions. Occasionally, however, the appearance of clinical lesions is further delayed, and the infants fail to show oral or cutaneous lesions during their nursery stay. This occurred in 20 of the 101 infants from whom *Candida albicans* was isolated (see Table 9).

Laboratory studies are of importance in determining the method of

transmission of candidiasis to the newborn. *Candida albicans* has not been isolated from nursery or hospital air[2, 8, 32] or from air and soil in general.[1, 31] Candidiasis therefore appears to be an endogenous disease, or one secondarily transmitted from person to person.[36]

METHOD OF TRANSMISSION

Neonatal candidiasis has been attributed to oral infection in the mother,[8] insufficiently sterilized bottles and nipples, pooled breast milk, handling by nurses,[29] and contaminated clothing, bedding and hands of infected mothers,[2, 4] Most available evidence, however, suggests that maternal vaginal candidiasis is the principal source of neonatal infection.[2, 13, 24, 34] *Candida albicans* occurs in the vaginal flora of approximately 36 per cent of both pregnant and nonpregnant women, with or without causing clinical vaginitis.[2, 4, 15, 18, 19, 37] Woodruff and Hesseltine[39] showed that infants born of infected mothers had a 35-times greater chance of having oral thrush than did infants of noninfected mothers.

The authors isolated *C. albicans* from the vagina of 20 of 75 mothers within 24 hours of delivery (group I). Eleven of the 20 infants born to the mycologically positive mothers subsequently proved to be infected. These 75 infants belonged to the group of 520 on whom both oral and fecal examinations were done routinely between the second and fifth days of life.

Conversely, vaginal smears and cultures were taken seven to 21 days post partum from 26 mothers after oral thrush had developed in their infants (group II). All but two of these women had suffered from severe vaginal pruritus and discharge during their pregnancy, symptoms suggestive of vaginal candidiasis.[24] In 16 cases cultures were still positive, while in 10 the organism could not be demonstrated. Since spontaneous cure of vaginal candidiasis usually follows parturition, negative laboratory findings one to three weeks post partum do not rule out prepartum infection.[27]

The correlation between maternal vaginal and neonatal candidiasis in the two groups studied is shown in Table 12. These findings agree with those of other observers, who found that oral thrush developed in 21 to 46 per cent of the infants born to infected mothers.[2, 3, 4, 39]

These findings present further evidence that maternal vaginal candidiasis is the primary source of neonatal infection. Infection is assumed to occur when the infant swallows some of the vaginal content during its passage through the birth canal. This view is supported by the fact that *C. albicans* has been isolated from the mouth and stools of newborn infants as early as the first and second days of life,[2, 24, 35, 29] In this connection it is of interest to note that the organism was not recovered

TABLE 12. *Correlation between Maternal and Neonatal Candidiasis*

VAGINAL SMEAR OR CULTURE	SYMPTOMS OF VAGINAL CANDIDIASIS IN PREGNANCY	TOTAL	GROUP I MOTHERS TESTED AT RANDOM (24 HOURS POST PARTUM) INFANTS				GROUP II MOTHERS SELECTED BECAUSE INFANTS HAD THRUSH (7-21 DAYS POST PARTUM)
			ORAL THRUSH	SKIN LESIONS ONLY	"LATENT THRUSH"	NEGATIVE	
Positive	Suggestive	13	4	5	1	3	15
Positive	None	7	1	0	0	6	1
Negative	Suggestive	0	0	0	0	0	8
Negative	None	55	0	0	0	55	2
Total		75	5	0	1	64	26

from 55 infants born of mycologically negative mothers and from 36 infants born by cesarean section.[24]

METHODS OF PREVENTION

It is probable that neonatal candidiasis can be prevented or decreased by thorough mycologic screening and adequate therapy of the ex-

TABLE 13. *Incidence of Candidiasis in the Infants of Mycologically Negative, Treated, and Mycologically Positive Untreated Mothers*

MOTHERS	TOTAL	INFANTS				
		ORAL THRUSH	SKIN LESIONS ONLY	"LATENT THRUSH"	NEGATIVE	PER CENT CLINICAL CANDIDIASIS
No candidiasis during pregnancy	80	0	1	0	79	1.2
Treated for vaginal candidiasis during pregnancy	22	0	0	1	21	0
Untreated vaginal candidiasis present	20	5	5	1	9	50.0

TABLE 14. *Effect of Prepartum Antimycotic Care on the Incidence of Neonatal Oral Thrush*

	NUMBER OF DELIVERIES	NUMBER OF INFANTS WITH THRUSH	PER CENT OF INFANTS WITH THRUSH
No specific investigation or treatment of vaginal candidiasis:			
Private obstetric cases	719	19	2.6
Service cases	268	10	3.7
Private obstetric cases with specific investigation and treatment of vaginal candidiasis	173	1	0.6

pectant mother during the last trimester of pregnancy. Such treatment should be given to all women who harbor *C. albicans* in the vagina, regardless of the presence or absence of subjective symptoms. Negative vaginal cultures should be the criterion of cure.

Tables 13 and 14 indicate the favorable effect of prenatal antimycotic care on the incidence of clinical and laboratory candidiasis in the offspring.

Preventive therapy of infants with preclinical thrush or of infants

born of infected mothers has been suggested by several authors,[9, 15, 34] but no reports of its actual use have appeared. The writers gave prophylactic therapy in six cases of "latent thrush." No oral lesions developed in three infants who received 400,000 units of nystatin by oral and topical application four times daily for five days. Two infants received the same dosage for three days, but oral thrush developed within a week after medication had been stopped. One infant was treated with gentian violet, and lesions developed while he was under therapy.

Inasmuch as all newborn infants are extremely susceptible to infection with *C. albicans*, detailed sanitary precautions are necessary at all times. This is an additional reason why nurses should wash their hands carefully after handling the feeding utensils, clothing or stools of an apparently healthy infant before going to the care of another. Similarly, mothers should be advised of the significance of candidiasis (vaginal and skin lesions, perlèche and paronychia) and the sanitary methods necessary to prevent its transmission to the newborn. An educational program for the personnel involved, stressing the important factors in the transmission of thrush, should be of value.

TREATMENT

Gentian violet has long been the treatment of choice for oral thrush.[10] In recent years the antibiotic nystatin[14] has also become available. More recently it has been prepared in lyophilized form. Another antibiotic which has shown promising results in candidal and other fungus infections is Amphotericin B.[12]

A comparison between gentian violet and nystatin in lyophilized and nonlyophilized form showed that the highest rate of cures was obtained with the lyophilized nystatin.[25] It is interesting to note, however, that the mean duration of therapy required for cure was similar with all types of medications. Apparently none of the antifungal agents at present available will produce immediate results analogous to those obtained with the antibacterial antibiotics.

The natural course of oral thrush apparently has not been systematically studied. Such a study, though highly desirable from a scientific point of view, is difficult to carry out in practice. We were able to observe only three cases of oral thrush which were left untreated. Spontaneous involution occurred within 23 to 59 days, which is compatible with previous reports.[2, 8]

Medication, therefore, probably shortens the course of the disease. In general, immediate improvement was noted after initiation of nystatin therapy, and frequently the mouth appeared clinically free of lesions after seven days. In some cases in which complete clearing of the mouth

was not obtained there was great improvement, except for a few small stubborn patches resistant to treatment.

In many instances *C. albicans* survived in the mouth in sufficient numbers to cause a relapse within one week to one month. Therapy should, therefore, be continued for several days after the lesions have subsided, especially if oral smears and cultures remain positive after a clinical cure.[21, 25]

Nystatin and Amphotericin B ointment were highly effective in neonatal cutaneous candidiasis of less than five days' duration. Cures were obtained in all cases within one week. In cases of greater duration a longer period of therapy was required and the cure rate was lower.[22] In such chronic cases of cutaneous candidiasis a combination of nystatin with fludrocortisone, neomycin and gramicidin was more beneficial than the antibiotic by itself.[22, 26] No edema or undue gain in weight indicative of sodium retention due to the fludrocortisone was observed in 39 infants treated with this preparation.[11, 28] The only after-effect noted in four cases was a marked but transitory erythema of the treated area.

Concurrent administration of nystatin by mouth did not appreciably shorten the course of the skin condition. It is recommended, however, in order to eliminate *C. albicans* from the intestine, since the infected stools constitute the primary focus of infection and recurrence of the skin lesions.

SUMMARY

Candida albicans frequently occurs as a saprophyte on the mucous membranes and in the intestine of older persons, but in the newborn is usually pathogenic. The reasons for this lack of resistance are unknown.

None of the factors commonly held to predispose to oral thrush seems to play a significant role in determining which infant will or will not have the disease. These factors include prematurity, resuscitative procedures, difficult or prolonged labor, breast feeding, debilitating disease, malnutrition and antibiotic therapy.

Candidiasis in the newborn is not limited to oral thrush. Cutaneous candidiasis occurs more frequently than has hitherto been assumed. The condition may be present as a concomitant of or sequel to oral thrush, or it may be present without oral involvement. In all cases of oral and cutaneous candidiasis the feces are infected.

Candida albicans is present in the mouth or the intestine for several days before oral or cutaneous lesions develop. This preclinical form of candidiasis, termed "latent thrush," may be diagnosed by laboratory methods.

Candida albicans was isolated from 4.6 per cent of a large series of infants; 3.1 per cent of these infants had oral thrush.

The incubation period of neonatal oral thrush depends on the number of organisms initially introduced and their rate of multiplication in the host. Its average length seems to be seven days.

The primary source of neonatal candidiasis appears to be maternal vaginal candidiasis. It is best prevented by early recognition and treatment of the disease in the expectant mother.

Lyophilized nystatin in aqueous suspension was an effective therapeutic agent for oral thrush. Therapy should be continued for several days after the clinical manifestations have subsided, in order to prevent recurrences due to surviving organisms.

Nystatin ointment gives good results in cutaneous candidiasis of less than five days' duration. In older cases, however, it is more effective when combined with fludrocortisone, neomycin and gramicidin.

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CUMULATIVE INDEX

February-August

Page numbers of clinic and symposium titles are given in **boldface** type.

ABDOMEN. See also *Gastrointestinal tract; Pelvis.*
  mass in, as symptom of pelvic disease, *Feb.*, 96
Abnormalities. See also under specific organs and regions.
  associated with renal tubular reabsorption defects, *May*, 437–8
  rachitic, orthopedic management, *May*, 438–9
  sex. See *Sex, anomalies.*
Abortion in teen-age pregnancy, *Feb.*, 143, 144
Abrasion. See under *Trauma.*
Abscess. See under specific organs and regions.
Accommodation. See under *Eyes.*
Acetazolamide in anterior chamber hemorrhage, *Feb.*, 214
Achalasia. See *Stomach, cardiospasm.*
Acid. See under names of specific acids.
Acidosis, and aminoaciduria, rickets with, *May*, 436
  renal tubular, rickets due to, *May*, 438
ACTH. See *Corticotropin.*
Addison's disease, effect on aldosterone production, *May*, 411
Adenoid degenerating agents. See *Adenovirus.*
Adenoidal-pharyngeal-conjunctival virus. See *Adenovirus.*
Adenoiditis, suppurative, *May*, **323–6**
Adenoma, adrenal, aldosteronism due to, *May*, 404–406
Adenovirus, *May*, 302–305
  clinical syndromes caused by, *May*, **301–12**
  pharyngoconjunctival fever, *May*, 303–304
Adenovirus vaccines, use of, *May*, 304–305
Adhesions, labial, *Feb.*, 36–7
Adjustment, eating problems related to, *Aug.*, 603–605
Adolescence. See also *Puberty.*
  characteristics, *Aug.*, 775–9
  definition, *Aug.*, 790–91
  emotional problems in girls, *Aug.*, **789–801**
    deviant behavior, *Aug.*, 796–7
    treatment, *Aug.*, 798–800
    with psychological symptoms, *Aug.*, 797–8
    with somatic symptoms, *Aug.*, 792–6
  maturbation in, *Aug.*, 770–71
  menstrual problems of, *Feb.*, **51–62.** See also *Menstruation.*
  office visits to physician, *Aug.*, 779–80
  pregnancy in, *Feb.*, 142 *ff.* See also *Pregnancy.*
  problems of, *Aug.*, **775–87**
  termination, *Aug.*, **789–90**
  theoretical background, *Aug.*, 791–2
  worries in, *Aug.*, 775–9
Adolescent-physician relationship, *Aug.*, 778–9
Adoption, doctor and, *May*, **523–30**
  of children of unmarried mothers, *Feb.*, 145
Adoption agency in adoptions, *May*, 527
Adrenalectomy. See *Adrenals, excision.*
Adrenals. See also *Addison's disease; Cushing's syndrome.*
  adenoma, aldosteronism due to, *May*, 404–406

Adrenals, cortex, hyperfunction, pseudohermaphroditism due to, *May*, 381–6
hyperplasia, congenital, treatment, *May*, 391–3
excision, effect on aldosterone production, *May*, 411
extracts, aldosterone in, *May*, 397–8
hyperplasia, bilateral, aldosteronism due to, *May*, 404–406
congenital, *Feb.*, 130 *ff.*
of salt-losing type, *May*, 409
insufficiency, acute, effect on aldosterone production, *May*, 411
tumors, sexual precocity due to, *Feb.*, 133 *ff.*
Affection, delinquency and, *Aug.*, 764
Agammaglobulinemia, relation to pneumocystis pneumonia, *May*, 333
Aggressiveness in asthma, *Aug.*, 738–41
Aldosterone, clinical aspects, *May*, 404–11
deficiency, isolated, *May*, 410, 411
effect on electrolyte metabolism, *May*, 399–400
excretion, urinary, mechanisms involved in, *May*, 400–404
in adrenal extracts and body fluids, *May*, 397–8
in experimental and clinical medicine, *May*, **397–416**
metabolism, *May*, 398–9
production, overproduction, clinical conditions associated with, *May*, 404–10
underproduction, clinical conditions associated with, *May*, 410–11
secretion, *May*, 398–9
mechanisms involved in, *May*, 400–404
Aldosteronism due to adrenal adenoma or hyperplasia, *May*, 404–406
Alimentary tract. See *Gastrointestinal tract.*
Allergy. See also *Asthma.*
asthma and, *Aug.*, 733–5
extrinsic, *Aug.*, 733
intrinsic, *Aug.*, 733
stress and, *Aug.*, 732–3
uveitis due to, *Feb.*, 181
Amblyopia. See under *Blindness.*
Amenorrhea, emotional problems due to, *Aug.*, 793
Amino acid, aromatic, excretion of, in pathogenesis of schizophrenia, *Aug.*, 706–707
in urine, *May*, 366
chromatographic analysis, *May*, 365
Aminoaciduria, and acidosis, rickets with, *May*, 436
rickets with, *May*, 434–5
Ammonium chloride in dysmenorrhea, *Feb.*, 61
Amphetamine, for masturbation, *Aug.*, 768
in behavior disorders, *Aug.*, 586–8
toxicity, *Aug.*, 590
Amphotericin in candidiasis, *Aug.*, 812, 813
Androgens, testosterone, effect on breast development, *Feb.*, 64, 65
in hermaphroditism, *May*, 391
in pseudohermaphroditism, *May*, 391
Anemia(s), due to blood loss, laboratory tests, *May*, 355–6
due to impaired red cell production, laboratory tests, *May*, 353–5
iron deficiency, laboratory tests, *May*, 354
laboratory tests, *May*, 353–7
megaloblastic, laboratory tests, *May*, 355
microcytic, hypochromic, laboratory tests, *May*, 353, 354
of blood destruction, laboratory tests, *May*, 356–7
of infection, laboratory tests, *May*, 354
of renal disease, laboratory tests, *May*, 354, 355
Anencephaly, genetic counselling in, *May*, 476–7
Angiocardiography. See under *Cardiovascular system.*
Anhydrohydroxyprogesterone, in hermaphroditism, *May*, 391
in pseudohermaphroditism, *May*, 391
Anhydroxyprogesterone in endometrial hyperplasia, *Feb.*, 58
Anomalies. See *Abnormalities*; and also under specific organs and regions.
Anorexia. See under *Appetite, disorders.*
Anoxia. See *Oxygen, deficiency.*
Antibiotics. See also specific antibiotics, as *Penicillin*, etc.
effects, given to mother prenatally, *May*, 275
in neonatal infections, *May*, 297–8
Antibodies, transplacental transfer, *May*, 291
Anxiety. See also *Stress.*
eating problems due to, *Aug.*, 603, 604
in behavioral syndrome with brain damage, *Aug.*, 694–6
separation, *Aug.*, 648
sources, in adolescents, *Aug.*, 777–8

Apgar rating of newborn, *May*, 265
Appendix, ruptured, vs. peritonitis, primary, *Feb.*, 98, 99
Appetite, disorders, anorexia, *Aug.*, 596, 793
treatment, *Aug.*, 607 *ff.*
anorexia nervosa, *Aug.*, 566, 604
Arterenol in pathogenesis of schizophrenia, *Aug.*, 706
Arteries, hypertrophy, medial, in idiopathic pulmonary hypertension, *May*, 346
Arteritis. See also *Endarteritis.*
necrotizing, in idiopathic pulmonary hypertension, *May*, 347, 348
Arthritis, rheumatoid, juvenile, uveitis due to, *Feb.*, 179–80
Ascites. See also *Liver, cirrhosis.*
cirrhosis with, *May*, 407
Asthenia, emotional. See *Cataplexy.*
Asthma, allergy and, *Aug.*, 733–5
behavior problems in, Aug., 738–43
inheritance, *Aug.*, 735
physiology, *Aug.*, 733–5
psychological aspects, *Aug.*, **731–47**
treatment, *Aug.*, 743–6
Atarax. See *Hydroxyzine.*
Atropine, in amblyopia, *Feb.*, 232
in chemical burns of eyes, *Feb.*, 223
Autism, infantile, early, *May*, 495–6; *Aug.*, 701, **711–30**
clinical manifestations, *Aug.*, 716–20
course, *Aug.*, 724–7
diagnosis, *Aug.*, 727–8
etiology, *Aug.*, 722–4
nosology, *Aug.*, 721–2
physical examination in, *Aug.*, 720–21
prognosis, *Aug.*, 724–7
treatment, *Aug.*, 728–9
vs. mental retardation, *Aug.*, 670
Axilla, glands, palpable, *Feb.*, 68
Azacyclonol in behavior disorders, *Aug.*, 582

Bacteremia in newborn, diagnosis, *May*, 293
Bartholin's glands in immaturity, *Feb.*, 10–11
Batten-Mayou's disease, macular degeneration due to, *Feb.*, 199, 200
Behavior. See also *Personality.*
destructive, *Aug.*, 569–70
treatment, *Aug.*, 570
deviant, in adolescent girls, *Aug.*, 796–7
Behavior, disorders, drug therapy, *Aug.*, **573–94**
symposium on, *Aug.*, **559–801**
treatment, general principles, *Aug.*, 570–72
office management, *Aug.*, **561–72**
problems, in adolescence, *Aug.*, **775–87**. See also *Adolescence.*
in asthma, *Aug.*, 738–43
in obesity, *Aug.*, 613–27
rebellious, *Aug.*, 569
sadistic, *Aug.*, 567–70
treatment, *Aug.*, 570
Behavioral syndrome with brain damage, *Aug.*, **687–98**
kinetic pattern, general, *Aug.*, 688–90
motor patterns, new, delay in acquisition of, *Aug.*, 691–2
primitive, retention of, *Aug.*, 690–91
motor performance, *Aug.*, 688–92
muscle tone changes, *Aug.*, 692
perception in, *Aug.*, 692–4
auditory, *Aug.*, 693–4
kinesthetic, *Aug.*, 693
olfactory, *Aug.*, 694
tactile, *Aug.*, 693
visual, *Aug.*, 693
Benactyzine, toxicity, *Aug.*, 589
Benadryl. See *Diphenylhydramine.*
Benzedrine. See *Amphetamine.*
Biliary tract. See also *Liver.*
atresia, liver function test, *May*, 364
Biopsy, of skin, as test of chromosomal sex, *May*, 377
renal, *May*, 367
Bleeding. See *Hemorrhage.*
Blindness. See also *Vision, defective.*
amblyopia, *Feb.*, 156, 157, 232
due to cataract, *Feb.*, 170
Blood, chemistry, *May*, 367–8
coagulation, laboratory tests, *May*, 358
destruction, anemia of, laboratory tests, *May*, 356–7
dyscrasias. See also specific dyscrasias, as *Anemia*, etc.
laboratory tests, *May*, 359
glucose. See *Blood, sugar.*
groups, Rh, incompatibility, prevention of erythroblastosis due to, *May*, 275–6
immunological techniques, *May*, 368
immunology, *May*, 367–8
in idiopathic pulmonary hypertension, *May*, 341–2

Blood, loss of. See *Hemorrhage*.
pressure, high, *May*, 408, 409
serum, chemistry, *May*, 367–8
enzymes, *May*, 367–8
immunological techniques, *May*, 368
immunology, *May*, 367–8
sugar, *May*, 367
tests, laboratory, *May*, 353–8
Body, constitution, factor in constipation, *Aug.*, 750
fluids. See under *Fluids*.
Boeck's sarcoidosis. See under *Sarcoidosis*.
Boston exanthem, *May*, 308
Bowels. See *Intestines*.
Brain, cerebrum, disease, reading disabilities due to, *May*, 515
dominance, reading disabilities due to, *May*, 516–17
damage, diffuse, vs. schizophrenia, *May*, 505, 506
with associated behavioral syndrome, *Aug.*, **687–98**. See also *Behavioral syndrome*.
fetal, encephalography, *May*, 271
surgery, lobotomy, in schizophrenia, *May*, 508
Breast, abscess, *Feb.*, 70
anatomy, *Feb.*, 64–5
anomalies, *Feb.*, 65–70
development, failure of, *Feb.*, 66
engorgement, *Feb.*, 69, 70
fibrosis, subareolar, *Feb.*, 67, 68
hypertrophy, in adolescence, *Feb.*, 68, 69
precocious, *Feb.*, 65, 81–2
immature, *Feb.*, **63–70**
injury, *Feb.*, **70**
lumps in, *Feb.*, 67
nipples, discharges from, *Feb.*, 68
pain in, *Feb.*, 65
pendulous, *Feb.*, 67
physiology, *Feb.*, 64–5
supernumerary, *Feb.*, 69
tenderness of, *Feb.*, 65
Brucellosis, uveitis due to, *Feb.*, 180
Burns, ocular, *Feb.*, 222–3. See also under *Eyes*.

Calciferol in rickets, *May*, 430
Calcium depletion due to defective handling of ions by renal tubules, *May*, 438
Calcium lactate in osteodystrophy due to renal insufficiency, *May*, 427
Calculi. See under *Kidneys*.
Candidiasis, cutaneous, *Aug.*, 806
latent, *Aug.*, 805
clinical developments, *Aug.*, 808
neonatal, *Aug.*, **803–15**
correlation with maternal candidiasis, *Aug.*, 810
diagnosis, *Aug.*, 807
incidence, *Aug.*, 804–806, 811
effect of prepartum antimycotic care on, *Aug.*, 811
laboratory findings, *Aug.*, 808–809
predisposing factors, *Aug.*, 803–804
prevention, *Aug.*, 811–12
transmission, *Aug.*, 809–11
treatment, *Aug.*, 812–13
types, Aug., 804–806
oral, in newborn, diagnosis, *May*, 293
incidence, *Aug.*, 804
vaginal, as source of neonatal candidiasis, *Aug.*, 809
Captodiamine in behavior disorders, *Aug.*, 585
Carbohydrates. See also *Glucose*.
absorption, in malabsorption syndrome, *May*, 363–4
Carcinoma. See under specific organs and regions.
Cardiac. See *Heart*.
Cardiospasm. See under *Stomach*.
Cardiovascular system. See also *Arteries*; *Heart*.
angiocardiography, *May*, 343
Cataplexy, *Aug.*, 642
Cataract, congenital, *Feb.*, **169–72**
hereditary, *Feb.*, 169
types, morphologic, *Feb.*, 170
lamellar, *Feb.*, 170
pyramidal, *Feb.*, 170
traumatic, *Feb.*, 215–16
Cauterization, iodine, in corneal abrasion, *Feb.*, 211
Cellular defense mechanisms of fetus, *May*, 274
Cerebrum. See under *Brain*.
Ceruloplasmin in pathogenesis of schizophrenia, *Aug.*, 706
Cervix uteri. See *Uterus, cervix*.
Change, capacity for, in adolescents, *Aug.*, 777
Child, involvement in adoption, *May*, **528–9**
Chloramphenicol in pneumonia in newborn, *May*, 294, 295
Chlorides, salivary, in malabsorption syndrome, *May*, 363
sweat, in malabsorption syndrome, *May*, 362–3

Chlorpromazine, in behavior disorders, *Aug.*, 575–8
toxicity, *Aug.*, 589
Choriomeningitis, lymphocytic, vs. aseptic meningitis, *May*, 318
Chorioretinitis. See *Uveitis, posterior.*
Choroiditis, *Feb.*, 173
Chromatin, sex, relation to sex chromosomes, *May*, 377–80
Chromosomal sex. See under *Sex.*
Chromosomes, sex, relation to sex chromatin, *May*, 377–80
Cirrhosis. See under *Liver.*
Clinical advances, recent, symposium on, *May*, **257–543**
Clitoris in immaturity, *Feb.*, 6–8
Clubfoot. See under *Foot.*
Coagulation. See under *Blood.*
Cocaine, in corneal abrasion, *Feb.*, 211
in examination of genitals, *Feb.*, 114
Colon, megacolon, vs. constipation, *Aug.*, 753
Compazine. See *Prochlorperazine.*
Condyloma acuminatum, *Feb.*, 38
Conjunctiva, foreign bodies in, *Feb.*, 211–13
subconjunctival hemorrhage, *Feb.*, 213–14
Conjunctivitis, *May*, 304
Conn's syndrome. See *Aldosteronism.*
Constipation, *Aug.*, **749–57**
mechanisms, *Aug.*, 750–53
summary, *Aug.*, 752–3
pathology, *Aug.*, 750
treatment, *Aug.*, 753–7
continuation, *Aug.*, 756–7
general, *Aug.*, 753
motivation, *Aug.*, 755–6
regulation, *Aug.*, 753–5
Constitution, anatomic. See under *Body.*
Contusions, ocular, *Feb.*, 213–18
fundus changes after, *Feb.*, 216–18
Cornea, abrasion, *Feb.*, 209–11
foreign bodies in, *Feb.*, 211–13
Corticotropin, effect on aldosterone secretion and excretion, *May*, 401
Cortisone, in congenital adrenocortical hyperplasia, *May*, 392
in precocious puberty, *Feb.*, 90
Counselling, genetic, in common diseases, *May*, **475–91**
Craniostenosis, *Aug.*, 681
Crying as symptom of pelvic disease, *Feb.*, 96
Culdoscopy in diagnosis of pelvic diseases, *Feb.*, 96–7
Cushing's syndrome, effect on aldosterone production, *May*, 410
Cyclitis, *Feb.*, 173
Cystine storage disease with rickets, *May*, **436–7**
Cysts. See also under specific organ or region.
dermoid, *Feb.*, 104
Cytomegalic inclusion disease, relation to pneumocystis pneumonia, *May*, 332
uveitis due to, *Feb.*, 183

DAWDLING, *Aug.*, 566–7
treatment, *Aug.*, 567
Deafness vs. schizophrenia, *May*, 505
Death, causes, anatomical, in newborn, *May*, 261
fear of, in adolescents, *Aug.*, 784–5
neonatal, due to infections, *May*, 290
Deficiency, mental. See *Mental deficiency.*
Deformities. See *Abnormalities.*
Dehydration, *May*, 408
in dysmenorrhea, *Feb.*, 61
Delalutin. See *Hydroxyprogesterone caproate.*
Delinquency, juvenile, *Aug.*, **759–66**
contributing factors, *Aug.*, 759–62
extrinsic, *Aug.*, 761–2
intrinsic, *Aug.*, 760–61
definition, *Aug.*, 759
physician in prevention of, *Aug.*, 762–5
prediction data, *Aug.*, 763–5
Delivery. See *Labor.*
Dementia infantilis vs. schizophrenia, *May*, 505
Dental. See *Teeth.*
Dermoid cysts, *Feb.*, 104
Development, normal, eating problems due to, *Aug.*, 597
Dexedrine. See *Dextro-amphetamine.*
Dextro-amphetamine in behavior disorders, *Aug.*, 586–8
Diabetes mellitus, genetic counselling in, *May*, 482–4
Diamox. See *Acetazolamide.*
Diarrhea, paradoxical, *Aug.*, 752
viral, *May*, 308
Dienestrol in dysmenorrhea, *Feb.*, 60
Diet. See also *Food; Nutrition.*
in constipation, *Aug.*, 750–51
Dilantin sodium. See *Diphenylhydantoin sodium.*
Diphenylhydantoin sodium, in behavior disorders, *Aug.*, 588
toxicity, *Aug.*, 590

Diphenylhydramine, in behavior disorders, *Aug.*, 584-5
toxicity, *Aug.*, 589
Diphenylmethane derivatives, in behavior disorders, *Aug.*, 582-5
toxicity, *Aug.*, 589
Discipline, delinquency and, *Aug.*, 763, 764
Disease. See also *Death* and specific diseases.
common, genetic counselling in, *May*, **475-91**
complicated by edema and sodium retention, *May*, 406-408
need for understanding of, in adolescents, *Aug.*, 784-5
physical, in adolescents, *Aug.*, 782-3
uncomplicated by edema, *May*, 408-409
Diverticulum. See under *Intestines*.
Doctors. See *Physicians*.
Dominance, cerebral, reading disabilities due to, *May*, 516-17
Dreams, frightening, *Aug.*, 640-41
Drowsiness, excessive, *Aug.*, 641-2
Drugs, therapeutic use, in behavior disorders, *Aug.*, **573-94**
changes in behavior with, *Aug.*, 577
classification, *Aug.*, 574
toxicity, *Aug.*, 589-90
working approach, *Aug.*, 590-91
in mental retardation, *Aug.*, 681 682
in schizophrenia, *May*, 507-508
Dye, triple, for care of umbilicus, *May*, 296
Dysautonomia, familial, vs. schizophrenia, *May*, 505
Dysgenesis. See under *Gonads* and *Seminiferous tubules*.
Dysmenorrhea, *Feb.*, 58-60
emotional problems due to, *Aug.*, 793, 794

EATING. See also *Diet*; *Feeding*; *Food*.
problems, *Aug.*, 566, **595-611**
definition, *Aug.*, 595-6
diagnosis, *Aug.*, 605-606
etiology, *Aug.*, 596-605
in childhood, related to feeding, *Aug.*, **599-603**
in infancy, related to feeding, *Aug.*, 596-9
prophylaxis, *Aug.*, 606-10
related to adjustment, *Aug.*, 603-605
Eating problems, treatment, *Aug.*, 606-10
types, *Aug.*, 595-6
ECHO virus, *May*, 305-309
aseptic meningitis due to, *May*, 305-308
clinical syndromes caused by, *May*, **301-12**
Echolalia, delayed, *Aug.*, 717
Edema. See also *Ascites*.
and sodium retention, diseases complicated by, *May*, 406-408
diseases uncomplicated by, *May*, 408-409
idiopathic, *May*, 407
Edrisal in dysmenorrhea, *Feb.*, 60
Education. See also *School*.
in mental retardation, *Aug.*, 678-9
evaluation, *Aug.*, 673
Ego, *May*, 494
Electrocardiography. See under *Heart*.
Electrolytes, metabolism, effect of aldosterone on, *May*, 399-400
Embryoma of kidney, *Feb.*, 105
Emotional asthenia. See *Cataplexy*.
Emotional deprivation vs. mental retardation, *Aug.*, 670
Emotional growth in normal child, *Aug.*, 562-3
Emotional problems, etiology, *Aug.*, 563-4
of adolescent girl, *Aug.*, **789-801**. See also *Adolescence*.
sources, *Aug.*, 564
types, *Aug.*, 564-70
Emotions, disturbances of, reading disabilities due to, *May*, 517-18
Encephalography. See under *Brain*.
Encopresis, *Aug.*, 752
Endarteritis, fibrosing, in idiopathic pulmonary hypertension, *May*, 347
Endocardium, fibroelastosis, vs. idiopathic pulmonary hypertension, *May*, 344
Endocrine glands. See also *Hormones*; and under specific glands.
in breast development, *Feb.*, 64
Endometriosis, *Feb.*, 106, 107, 108
Endometrium, hyperplasia, *Feb.*, 57-8
in immaturity, *Feb.*, **17-18**
Enemas, phosphate, hypertonic, in fecal impactions, *Aug.*, 753
Enuresis. See *Urine, incontinence*.
Environment, as factor in schizophrenia, *Aug.*, 705
hospital nursery, in neonatal infections, *May*, 292, 295
in onset of menstruation, *Feb.*, 53
Enzymes, serum, *May*, 367-8

Ephialtes. See *Nightmares.*
Epilepsy, genetic counselling in, *May*, 484–6
Epinephrine. See also *Arterenol.*
in eye injuries, perforating, *Feb.*, 218
in pathogenesis of schizophrenia, *Aug.*, 706
Epithelium, vaginal, in immaturity, *Feb.*, 11
Equanil. See *Meprobamate.*
Equilibrium, disturbance, in brain-damaged children, *Aug.*, 690
emotional, need for, in adolescence, *Aug.*, 791
Eruptions, acute, uveitis due to, *Feb.*, 180–81, 183
Erythroblastosis. See *Hemolytic disease of newborn.*
Erythrocytes, production, impaired, anemia due to, laboratory tests, *May*, 353–5
Esophagitis, reflux, *May*, 449–50
Esophagus, ring, lower, vs. congenital esophageal stenosis, *May*, 453
stenosis, cicatricial. See *Esophagus, stenosis, secondary.*
congenital, *May*, **443–55**
membranous, *May*, 450–51
secondary, *May*, 450
web, vs. congenital esophageal stenosis, *May*, 453
Estradiol, estinyl, in dysmenorrhea, *Feb.*, 60
in endometrial hyperplasia, *Feb.*, 58
Estrogens. See also specific preparations.
deprivation of, hemorrhage due to, *Feb.*, 3, 4
effect on breast development, *Feb.*, 64
in adherent prepuce, *Feb.*, 37, 38
ointment, in infectious granuloma of vulva, *Feb.*, 36
in labial adhesions, *Feb.*, 37
Premarin, in endometrial hyperplasia, *Feb.*, 58
Ethinyltestosterone in endometrial hyperplasia, *Feb.*, 58
Ethisterone in endometrial hyperplasia, *Feb.*, 58
Exanthems. See also *Eruptions.*
Boston, *May*, 308
Exercise, in dysmenorrhea, *Feb.*, 60
in strabismus, *Feb.*, 159–61
Exotropia, intermittent, *Feb.*, 167, 168
Eyelids, lacerations, *Feb.*, 205–209
Eyes. See also *Blindness; Conjunctiva; Glasses; Nerves, optic; Ophthalmology; Retina; Vision.*
accommodation, *Feb.*, 154
anatomy, *Feb.*, 186–7
anterior chamber, hemorrhage, *Feb.*, 214–15
burns, chemical, *Feb.*, 222–3
thermal, *Feb.*, 222
contusions, *Feb.*, 213–18
crossed. See *Strabismus.*
disk distortion in retrolental fibroplasia, *Feb.*, 241–2
fundus oculi, *Feb.*, 196–200
changes after contusions, *Feb.*, 216–18
injuries, *Feb.*, **203–24**
classification, *Feb.*, 203
examination, *Feb.*, 204–205
mechanical, *Feb.*, 205–21
perforating, without retained intraocular foreign body, *Feb.*, 218–20
with retained intraocular foreign body, *Feb.*, 220–21
macular degeneration, *Feb.*, 199–200
motility, *Feb.*, 186–9
muscles, paralysis of, *Feb.*, 187–8
myasthenia gravis, *Feb.*, 188–9
of newborn, care of, *May*, 296–7
paralysis, conjugate and disjunctive, *Feb.*, 188
pupils, reflexes, *Feb.*, 196
radiation injury, *Feb.*, 223–4

Family, cohesiveness, delinquency and, *Aug.*, 764
environment, in school phobia, *Aug.*, **654–8**
migration of, delinquency due to, *Aug.*, 761
Fasciculus, longitudinal, medial, lesions of, nystagmus due to, *Feb.*, 193–4
Fat absorption in malabsorption syndrome, *May*, 360–62
Father, eating problems due to, *Aug.*, 600
Feces, holding, in constipation, *Aug.*, 751–2
impaction of, treatment, *Aug.*, 753, 754
incontinence, *Aug.*, **749–57.** See also *Constipation.*
Feeding. See also *Diet; Eating; Food.*
artificial, eating problems due to, *Aug.*, 597
eating problems related to, in childhood, *Aug.*, 599–603
in infancy, *Aug.*, 596–9
Ferric chloride in diagnosis of phenylketonuria, *Aug.*, 674

Fetus. See also *Newborn; Placenta.*
defense mechanisms, *May*, 274
delivery, early, in prevention of death from erythroblastosis, *May*, **279–85**
distress, *May*, 268–72
electrocardiography, *May*, 269–71
encephalography, *May*, 271
Fibroelastosis. See under *Endocardium.*
Figure-background perception in brain damage, *Aug.*, 693
Fistula, tracheo-esophageal, *May*, 452–3
Fluids. See also *Milk.*
and electrolytes, therapy, in peritonitis, primary, *Feb.*, 101
body, aldosterone in, *May*, 397–8
Fluorescein in corneal abrasion, *Feb.*, 209
Food. See also *Diet; Milk; Nutrition.*
idiosyncrasies, eating problems due to, *Aug.*, 598, 600
solid, eating problems due to, *Aug.*, 602, 603
Foot, clubfoot, genetic counselling in, *May*, 480–81
Foreign bodies, conjunctival, *Feb.*, 211–**13**
corneal, *Feb.*, 211–13
in vagina, *Feb.*, 46
examination for, *Feb.*, 31
Frenquel. See *Azacyclonol.*
Fuchs, heterochromic iridocyclitis of, *Feb.*, 179
Fundus oculi. See under *Eyes.*
Furacin. See *Nitrofurazone.*

Galactosemia, *Aug.*, 681
Gantrisin. See *Sulfisoxazole* under *Sulfonamides.*
Gargoylism vs. schizophrenia, *May*, 505
Gastroesophageal reflux. See *Esophagitis, reflux.*
Gastrointestinal tract, emotional problems involving, *Aug.*, 795
laboratory tests, *May*, 358–64
vertebral anomalies and, *May*, **457–74.** See also *Vertebrae, anomalies.*
Genetic factors in schizophrenia, *Aug.*, 704–705
Genetics, counselling in common diseases, *May*, **475–91**
Genitals. See also *Gonads; Vulva.*
differentiation, prenatal, *Feb.*, 119–20
female, examination of, *Feb.*, **19–34**
age for, *Feb.*, 23–8
for symptoms, *Feb.*, 28–33
parental cooperation, *Feb.*, 22–3
pathology and surgical procedures in, *Feb.*, 32
Genitals, female, examination of, physical findings, *Feb.*, 30
progression of, *Feb.*, 23–8
purpose, *Feb.*, 21–2
external, and vulva, disorders of, *Feb.*, **35–49**
hormonal influences on, *Feb.*, 3–4
in immaturity, *Feb.*, **3–18**
injuries to, *Feb.*, 44, 45
Gentian violet. See *Methylrosaniline.*
Glands. See specific glands.
Glasses in strabismus, *Feb.*, 158–9
Glaucoma, congenital, *Feb.*, **225–9**
Glucose, in blood. See *Blood, sugar.*
urinary, test for, *May*, 365
Gluten sensitivity in malabsorption syndrome, *May*, 364
Glycogen storage disease vs. idiopathic pulmonary hypertension, *May*, 344
Gonads. See also *Ovary.*
dysgenesis, *Feb.*, 126–30
chromosomal sex tests in, *May*, 386–7
treatment, *May*, 393
Goniotomy in glaucoma, *Feb.*, 227
Gonorrhea, *Feb.*, **41–2**
Granuloma, infectious, of vulva, *Feb.*, 36
Grasping reflex in brain-damaged children, *Aug.*, 690
Group psychotherapy in schizophrenia, *May*, 507
Growth, concern with, in adolescents, *Aug.*, 776
eating problems due to, *Aug.*, 599
emotional, in normal child, *Aug.*, 562–3
Growth hormone. See *Somatotropin.*
Gynecologic aspects of sexual precocity, *Feb.*, **71–93**
Gynecologic complaints, due to nutritional disorders, *Feb.*, 29
in young girls, *Feb.*, 29
Gynecology, problems of, symposium on, *Feb.*, **1–149**
Gynecomastia. See *Breast, hypertrophy.*

Hair, body, growth of, generalized, precocious, *Feb.*, 84–5
sexual, precocious growth, *Feb.*, 82–3
Harelip, genetic counselling, *May*, 477–80
Hearing, loss of. See *Deafness.*
Heart, anomalies, congenital, vs. idiopathic pulmonary hypertension, *May*, 344
catheterization, in idiopathic pulmonary hypertension, *May*, 342–3

Heart, disease, congenital, genetic counselling, *May*, 481–2
electrocardiography, in idiopathic pulmonary hypertension, *May*, 341
failure. See *Heart, insufficiency*.
fetal, electrocardiography, *May*, 269–71
glycogen storage disease, vs. idiopathic pulmonary hypertension, *May*, 344
insufficiency, with edema, *May*, 407
Heller's disease. See *Dementia infantilis*.
Hemolytic disease of newborn, due to Rh incompatibility, prevention of, *May*, 275–6
early delivery in prevention of fetal death from, *May*, **279–85**
Hemorrhage, anemia due to, laboratory tests, *May*, 355–6
anterior chamber, *Feb.*, 214–15
estrogen-deprivation, *Feb.*, 3, 4
subconjunctival, *Feb.*, 213–14
uterine, functional. See *Menstruation*.
vaginal, precocious, *Feb.*, 83–4
vitreous, *Feb.*, 216
Heredity in asthma, *Aug.*, 735
Hermaphroditism, pseudohermaphroditism, female, *Feb.*, 130–33
chromosomal sex tests in, *May*, 381–6
due to adrenocortical hyperfunction, *May*, 381–6
with normal adrenal function, *May*, 386
male, *Feb.*, 121–6
chromosomal sex tests in, *May*, 380–81
treatment, *May*, 390–91
true, *Feb.*, 121
chromosomal sex tests in, *May*, 386
treatment, *May*, 390–91
Herpes simplex vs. aseptic meningitis, *May*, 318, 319
Heterochromia, congenital, *Feb.*, 179
Heterophoria. See *Strabismus, latent*.
Heterotropia. See *Strabismus, manifest*.
Hexachloraphene in care of skin of newborn, *May*, 296
Hirschsprung's disease. See *Colon, megacolon*.
History in diagnosis of pelvic diseases, *Feb.*, 95–6
Homatropine in chemical burns of eyes, *Feb.*, 223
Home training in mental retardation, *Aug.*, 678, 679
Hormones, growth. See *Somatotropin*.
influence on female genitals, *Feb.*, 3–4
lactogenic. See *Mammogen*.
Hospitals, nursery, environment of, in neonatal infections, *May*, 292, 295
personnel of, neonatal infections and, *May*, 297
premature, recommendations for use of oxygen in, *Feb.*, 246
Humoral defense mechanisms of fetus, *May*, 274
Hyaline membrane syndrome in neonatal mortality, *May*, 267, 268
Hydantoin compounds in behavior disorders, *Aug.*, 588–9
17-Hydrocorticoid production, excessive, *May*, 409–10
Hydrocortisone, in chemical burns of eyes, *Feb.*, 223
in sympathetic ophthalmia, *Feb.*, 220
Hydrosalpinx, *Feb.*, 102
Hydroxyprogesterone caproate in endometrial hyperplasia, *Feb.*, 58
Hydroxyzine in behavior disorders, *Aug.*, 583–4
Hygiene of menstruation, *Feb.*, 61–2
Hymen in immaturity, *Feb.*, 9–10
Hymenectomy, *Feb.*, 9, 10
Hymenorrhaphy, *Feb.*, 10
Hypercalcuria, idiopathic, *May*, 438
Hyperglycinuria, rickets with, *May*, 437
Hyperkinesis in brain-damaged children, *Aug.*, 688, 689, 690
Hyperplasia, adrenocortical. See *Adrenals, cortex, hyperplasia*.
Hyperplasia endometrii, *Feb.*, 57–8
Hypertension. See also *Blood pressure, high*.
pulmonary, idiopathic, *May*, **337–52**
Hypertensive disease, renal function, unilateral, tests of, *May*, 365–7
Hypnalgia, *Aug.*, 639
Hypogammaglobulinemia, relation to pneumocystis pneumonia, *May*, 333
Hypokinesis in brain-damaged children, *Aug.*, 690
Hypophosphatasia, *May*, 438
Hypoproteinemia, idiopathic, *May*, 407, 408

Iatrogenic. See *Physicians*.
Idiocy, amaurotic, macular degeneration due to, *Feb.*, 199
diagnosis, dermal configurations in, *May*, **531–43**
genetic counselling in, *May*, 487
Illness. See *Disease*.
Incubus. See *Nightmares*.

Independence, achievement, in adolescents, *Aug.*, 777
Infection, anemia of, laboratory tests, *May*, 354
intrauterine, management, *May*, 294–5
neonatal. See under *Newborn*.
vulvovaginal, *Feb.*, 40–44
Infectious diseases, cataract due to, *Feb.*, 169, 170
Inheritance. See *Heredity*.
Injuries. See *Burns; Trauma;* and under specific organ or region.
Institutionalization, in mental retardation, *Aug.*, 677
in schizophrenia, *May*, 508
Intestines. See also *Appendix; Colon; Feces; Gastrointestinal tract.*
diverticulum, Meckel's, vs. peritonitis, primary, *Feb.*, 100
obstruction, vs. peritonitis, primary, *Feb.*, 100
Intrapelvic complications, *Feb.*, **95–110.** See also *Pelvis, diseases.*
Intussusception vs. peritonitis, primary, *Feb.*, 99
Iodine, excretion, urinary, *May*, 360
in corneal abrasion, *Feb.*, 211
Iodochlorhydroxyquin in trichomoniasis, vaginal, *Feb.*, 45
Ions, defective handling by renal tubules, calcium depletion due to, *May*, 438
Iproniazid, in behavior disorders, *Aug.*, 588
toxicity, *Aug.*, 590
Iridocyclitis. See *Uveitis, anterior.*
Iritis, *Feb.*, 173
Iron deficiency anemia. See under *Anemia.*
Isolation in neonatal infections, *May*, 293–4

JACTATIO capitis nocturna, *Aug.*, 639

KERATOCONJUNCTIVITIS, epidemic, *May*, 304
Kidneys, biopsy, *May*, 367
calculi, vs. peritonitis, *Feb.*, 100
disease, anemia of, laboratory tests, *May*, 354, 355
embryoma. See *Kidneys, tumors, Wilms'.*
function, unilateral, in hypertensive disease, tests of, *May*, 365–7
insufficiency, chronic, osteodystrophy due to, *May*, 425–7
Kidneys, laboratory tests, *May*, 364–7
tubules, acidosis, rickets due to, *May*, 438
calcium depletion due to defective handling of ions by, *May*, 438
insufficiency, rickets due to, *May*, 427–8
reabsorption defects, abnormalities with, *May*, 437–8
tumors, Wilms', *Feb.*, 105
Klinefelter's syndrome. See *Seminiferous tubules, dysgenesis.*
Kraurosis vulvae vs. lichen sclerosus vel atrophicus, *Feb.*, 38

LABIA, adhesions, *Feb.*, 36–7
transagglutination, *Feb.*, 6
Labor. See also *Abortion; Newborn; Obstetrics; Pregnancy; Puerperium.*
early, in prevention of fetal death from erythroblastosis, *May*, **279–85**
in adolescents, management of, *Feb.*, 147–8
Laboratory investigation in aseptic meningitis, *May*, 321
Laboratory procedures, *May*, **353–73**
Lactic acid in vulvovaginitis, nonspecific, *Feb.*, **44**
Landolt's broken ring test of vision, *Feb.*, 235
Learning, inhibition of, vs. mental retardation, *Aug.*, 670
Lens, dislocated, *Feb.*, 215–16
Leptospirosis vs. aseptic meningitis, *May*, 317, 318
Leukopenia, laboratory tests, *May*, 357–8
Lichen sclerosus vel atrophicus, *Feb.*, 38
Lids. See *Eyelids.*
Lip, cleft. See *Harelip.*
Liver, cirrhosis with ascites, *May*, 407
function test for biliary atresia, *May*, 364
Lobotomy. See under *Brain, surgery.*

MACROMASTIA gigantica. See *Breast, hypertrophy.*
Macula. See under *Eyes.*
Malabsorption syndrome, laboratory tests, *May*, 358–64
Mammogen in breast development, *Feb.*, 64
Marble-board test in brain damage, *Aug.*, 693
Marsilid. See *Iproniazid.*

Masturbation, *Feb.*, 115–18; *Aug.*, **767–74**
in adolescence, *Aug.*, 770–71
in infancy, *Aug.*, 767–9
treatment, *Aug.*, 768–9
in preschool children, *Aug.*, 769–70
in school children, *Aug.*, 769–70
treatment, *Aug.*, 771–3
Maturation, capacity for, in asthma, *Aug.*, 742–3
concern with, in adolescents, *Aug.*, 776
lag in, reading disabilities due to, *May*, 515
Meckel's diverticulum. See under *Intestines, diverticulum.*
Medicine, experimental and clinical, aldosterone in, *May*, **397–416**
Menarche, *Feb.*, 51
early, *Feb.*, 53
Meninges, subdural hematoma, papilledema due to, *Feb.*, 198
Meningitis, aseptic, *May*, **313–22**
caused by ECHO virus, *May*, 305–307
virus isolations, *May*, 318
with maculopapular rash, *May*, 307–308, 319–20
bacterial, purulent, vs. aseptic meningitis, *May*, 315, 316, 317
tuberculous, vs. aseptic meningitis, *May*, 315, 316
Menses. See *Menstruation.*
Menstruation, adolescent's reaction to, *Aug.*, 781–2
anovulatory, *Feb.*, 55–6
emotional problems due to, *Aug.*, 792
in adolescence, abnormal, *Feb.*, 56–8
hygiene of, *Feb.*, 61–2
irregular, *Feb.*, 54–5
premenstrual tension, *Feb.*, 60–61
problems of, *Feb.*, **51–62**
onset of, age at, *Feb.*, 51–4
Mental deficiency, genetic counselling in, *May*, 486
vs. schizophrenia, *May*, 504
Mental retardation, *Aug.*, **667–85**
classification, *Aug.*, 674–5
diagnosis, comprehensive, *Aug.*, 674–5
differential diagnosis, *Aug.*, 669–70
evaluation, *Aug.*, 668–74
dental, *Aug.*, 673
educational, *Aug.*, 673
orthopedic, *Aug.*, 673
psychologic, *Aug.*, 671
social work, *Aug.*, 671–2
speech, *Aug.*, 672–3
informing parents, *Aug.*, 675–6
Mental retardation, laboratory tests, *Aug.*, 674
prognosis, *Aug.*, 682
scope of problem, *Aug.*, 667–8
treatment, *Aug.*, 676–82
education, *Aug.*, 678–9
medical, *Aug.*, 681–2
parent guidance, *Aug.*, 677–8
psychiatric, *Aug.*, 679–80
social work, *Aug.*, 680
speech therapy, *Aug.*, 680–81
surgical, *Aug.*, 681–2
Mephenesin in behavior disorders, *Aug.*, 585
Meprobamate, in behavior disorders, *Aug.*, 585–6
toxicity, *Aug.*, 589, 590
Mercury, ammoniated, in condyloma acuminatum, *Feb.*, 38
Metabolism, disorders of, cataract due to, *Feb.*, 169
electrolyte, effect of aldosterone on, *May*, 399–400
Methylrosaniline, in candidiasis, *Aug.*, 812
in mycotic infections of vagina, *Feb.*, 46
in oral thrush, *May*, 293
in vulvar mycosis, *Feb.*, 36
Milk, eating problems due to, *Aug.*, 598
Miltown. See *Meprobamate.*
Mineral oil. See *Petrolatum, liquid.*
Miotics in strabismus, *Feb.*, 158–9
Mongolism. See *Idiocy.*
Moro response in brain damage, *Aug.*, 694
Mortality, neonatal, reduction in, *May*, **259–77**
Mother, insecure or neurotic, eating problems due to, *Aug.*, 599
Motor patterns, new, delay in acquisition of, in behavioral syndrome with brain damage, *Aug.*, 691–2
primitive, retention in behavioral syndrome with brain damage, *Aug.*, 690–91
Motor performance in behavioral syndrome with brain damage, *Aug.*, 688–92
Mouth, mucosal smear as test of chromosomal sex, *May*, 376
Mucoproteins in duodenal secretions, in malabsorption syndrome, *May*, 363
Mucosa, oral, smear of, as test of chromosomal sex, *May*, 376
Mumps, nonglandular, vs. aseptic meningitis, *May*, 318

Muscles, ocular, paralysis of, *Feb.*, 187–8
tone, changes in, in behavioral syndrome with brain damage, *Aug.*, 692
Myasthenia gravis, ocular, *Feb.*, 188–9
Mycostatin. See *Nystatin*.
Mycotic infections, vaginal, *Feb.*, 45–6

NARCOLEPSY. See under *Sleep, disorders*.
Neck reflex, tonic, in brain-damaged children, *Aug.*, 690
Negativism in asthma, *Aug.*, 741–2
Nematodes, uveitis due to, *Feb.*, 183
Neoplasms. See *Tumors*; and under organ or region affected.
Nephritis, potassium-losing. See *Aldosteronism, due to adrenal adenoma*.
sodium-losing, *May*, 408
Nephrosis, *May*, 407
Nerves, cranial, oculomotor, paralysis of, *Feb.*, 187, 188
optic, atrophy of, *Feb.*, 196–7
neuritis, papilledema due to, *Feb.*, 198
papilledema, *Feb.*, 197–9
Neuroblastoma. See *Sympathicogonioma*.
Neurology, pediatric ophthalmology from standpoint of, *Feb.*, **185–201**
Neurosis, obsessive-compulsive, *Aug.*, 701
vs. schizophrenia, *May*, 506
Neutrophils in test of chromosomal sex, *May*, 377
Newborn, Apgar rating, *May*, 265
eyes, care of, *May*, 296–7
infections, *May*, 287
antibiotics in, *May*, 297–8
characteristics, *May*, 290–92
clinical manifestations, *May*, 290–91
complications, *May*, 289
consequences, *May*, 289–90
control of, *May*, **287–300**
diagnosis, early, *May*, 266, 293
frequency, *May*, 287–9
hospital nursery environment, *May*, 292, 295
intrauterine, management, *May*, 294–5
isolation, *May*, 293–4
mortality due to, *May*, 290
notification, *May*, 295
nursery personnel and, *May*, 297
prenatal, *May*, 272–3
routes of, *May*, 273–4
resistance to, *May*, 291–2
increase in, *May*, 295
shared, *May*, 292
spread to family, *May*, 290
Newborn, mortality, causes, anatomical, *May*, 261
preventable, *May*, 264
preventability, *May*, 262–4
assessment of, *May*, 262
program for, *May*, 265–7
reduction in, *May*, **259–77**
the future, *May*, 267–76
mature infant, *May*, 261–2
the present, *May*, 259–67
mortality rate, *May*, 259
skin, care of, *May*, 296
umbilicus, care of, *May*, 296
Nightmares, *Aug.*, 640
Night terrors, *Aug.*, 640
Nipples. See under *Breast*.
Nitrofurazone in vulvovaginitis, *Feb.*, 44
Norepinephrine. See *Arterenol*.
Nursery. See under *Hospitals*.
Nutrition. See also *Diet*; *Feeding*; *Food*.
disorders of, gynecologic complaints due to, *Feb.*, 29
Nystagmus, *Feb.*, 189–96
caloric, *Feb.*, 191
central, *Feb.*, 192–4
cerebellar, *Feb.*, 192
classification, *Feb.*, 189
defective vision as cause of, *Feb.*, 190
due to cataract, *Feb.*, 170
hereditary, *Feb.*, 194
hysterical, *Feb.*, 195
labyrinthine, *Feb.*, 190–91
latent, *Feb.*, 194–5
lesions, of medial longitudinal fasciculus, as cause of, *Feb.*, 193–4
of vestibular nucleus as cause of, *Feb.*, 192–3
muscular, *Feb.*, 191–2
neuromuscular, physiologic, *Feb.*, 191
occupational, *Feb.*, 195
optic, *Feb.*, 190
optokinetic, *Feb.*, 190
paretic, *Feb.*, 191–2
peripheral vestibular disease as cause of, *Feb.*, 191
railway. See *Nystagmus, optokinetic*.
rotational, *Feb.*, 190–91
toxic, *Feb.*, 195
voluntary, *Feb.*, 195
Nystatin, in candidiasis, *Aug.*, 812, 813
prophylactic use, *Aug.*, 812
in mycotic infections of vagina, *Feb.*, 46

OBESITY, behavior problems in, *Aug.*, **613–27**
Obsessive-compulsive neurosis, *Aug.*, 701

Obstetrics. See also *Abortion; Labor; Pregnancy; Puerperium.*
teen-age, *Feb.*, **139–49**
Ocular. See *Eyes; Vision.*
Oculo-cerebro-renal syndrome, *May*, 437
Office management of behavior disorders, *Aug.*, **561–72**
Oligophrenia, phenylpyruvic, *Aug.*, 681
vs. schizophrenia, *May*, 505
Ophthaine, for ocular foreign bodies, *Feb.*, 212
in examination of eye injuries, *Feb.*, 204
Ophthalmia, sympathetic. See *Uveitis.*
Ophthalmology, pediatric, from standpoint of neurology, *Feb.*, **185–201**
symposium on, *Feb.*, **151–247**
Optic nerves; neuritis. See under *Nerves.*
Organic disorders vs. schizophrenia, *May*, 505–506
Orphan virus. See *ECHO virus.*
Orthopedic evaluation in mental retardation, *Aug.*, 673
Orthopedic management of rachitic deformities, *May*, 438–9
Orthoptics in strabismus, *Feb.*, 159–61
Osteodystrophy due to chronic renal insufficiency, *May*, 425–7
pannephritic. See *Osteodystrophy due to chronic renal insufficiency.*
Osteotomy for rachitic deformities, *May*, 439
Outbursts, explosive, impulsive, episodic, *Aug.*, 570
Ovary, agenesis. See *Gonads, dysgenesis.*
cyst, *Feb.*, 104
follicular, precocious puberty due to, *Feb.*, 75–8
in immaturity, *Feb.*, 18
tumor, *Feb.*, 105
sexual precocity due to, *Feb.*, 80, 136
treatment, *Feb.*, 106
Overdependency in asthma, *Aug.*, 741–2
Overeating, eating problems due to, *Aug.*, 601
Oxygen, deficiency, fetal distress due to, *May*, 268, 269
mechanism of action in retrolental fibroplasia, *Feb.*, 244–6
role in retrolental fibroplasia, *Feb.*, 242–4
use in premature nursery, recommendations for, *Feb.*, 246

Pain, psychogenic, during sleep, *Aug.*, 639
Palate, cleft, genetic counselling in, *May*, 477–80
Pancreas, fibrocystic disease, genetic counselling in, *May*, 486
Panuveitis, *Feb.*, 173
Papilledema. See under *Nerves, optic.*
Paralysis, ocular, *Feb.*, 188
of ocular muscles, *Feb.*, 187–8
periodic, familial, *May*, 408
Paraurethral duct cyst, *Feb.*, 39
Parents, absence of, delinquency due to, *Aug.*, 761
adolescent's changing feelings toward, *Aug.*, 781
adopting, in adoptions, *May*, 526–7
cooperation in genital examination in young girls, *Feb.*, 22–3
counselling, in mental retardation, *Aug.*, 675–6
guidance, in mental retardation, *Aug.*, 677–8
in etiology of schizophrenia, *May*, 502–503
natural, involvement in adoptions, *May*, 525–6
psychotherapy with, in childhood schizophrenia, *May*, 507
Pavor nocturnus. See *Night terrors.*
Pelvis, diseases, complications of, intrapelvic, *Feb.*, **95–110**
intrapelvic, *Feb.*, 97–102
tumors, *Feb.*, 104–108
viscera, infections of, *Feb.*, 102–104
Penicillin, in eye injuries, perforating, *Feb.*, 218
in gonorrheal vulvovaginitis, *Feb.*, 41
in infections of pelvic viscera, *Feb.*, 103
in pneumonia in newborn, *Feb.*, 294
Perception in behavioral syndrome with brain damage, *Aug.*, 692–4
Perineum, inflammation, *Feb.*, 35–6
Peritonitis, idiopathic. See *Peritonitis, primary.*
primary, *Feb.*, 97–102
Perphenazine in behavior disorders, *Aug.*, 579
Personality development, *Aug.*, 736 *ff.*
Personnel in reduction of neonatal mortality, *May*, 266
Petrolatum, liquid, in constipation, *Aug.*, 754
Pharyngitis, exudative, nonbacterial, *May*, 303
Pharyngoconjunctival fever. See under *Adenovirus.*
Phenergan. See *Promethazine.*
Phenothiazine derivatives in behavior disorders, *Aug.*, 575–80

Phenylketonuria, *Aug.*, 674
Phenylpyruvic oligophrenia, *Aug.*, 681
Phobia, school, *Aug.*, **645-66**. See also *School phobia*.
Physical findings on genital examination in young girls, *Feb.*, 30
Physician-adolescent relationship, *Aug.*, 778-9
Physicians, adoption and, *May*, **523-30**. See also *Adoption*.
  eating problems due to, *Aug.*, 601, 602
  role in prevention of juvenile delinquency, *Aug.*, 762-5
  sexual precocity due to, *Feb.*, 85-7
Pineal extract in pathogenesis of schizophrenia, *Aug.*, 707
Placenta, function, tests of, *May*, 271-2
Pneumocystis pneumonia, *May*, **327-35**
Pneumonia, atypical, primary, *May*, 303
  plasma cell, interstitial, *May*, **327-35**
  pneumocystis, *May*, **327-35**
  vs. peritonitis, primary, *Feb.*, 99, 100
Pontocaine. See *Tetracaine*.
Posture, tests of, in brain-damaged children, *Aug.*, 691
Potassium-losing nephritis. See *Aldosteronism due to adrenal adenoma*.
Prediction data in juvenile delinquency, *Aug.*, 763-5
Prednisolone, in chemical burns of eyes, *Feb.*, 223
  in sympathetic ophthalmia, *Feb.*, 220
Pregnancy, effect on aldosterone production, *May*, 410
  in adolescence, *Feb.*, 142 *ff.*
    prenatal care, *Feb.*, 145-7
    toxemia in, *Feb.*, 146, 147
  prenatal care in prevention of mortality, *May*, 265
Pregneninolone in endometrial hyperplasia, *Feb.*, 58
Premarin. See under *Estrogens*.
Premature infant, mortality rate, *May*, 260
Prenatal. See *Fetus; Labor; Pregnancy*.
Prepuce, adherent, *Feb.*, 37-8
Prochlorperazine in behavior disorders, *Aug.*, 579
Progesterone, effect on breast development, *Feb.*, 64
  in endometrial hyperplasia, *Feb.*, 58
Promazine in behavior disorders, *Aug.*, 578-9
Promethazine in behavior disorders, *Aug.*, 580
Propanediol derivatives, in behavior disorders, *Aug.*, 585-6
  toxicity, *Aug.*, 589, 590
Proteins, absorption, in malabsorption syndrome, *May*, 364
  restriction, in osteodystrophy due to chronic renal insufficiency, *May*, 427
Pseudohermaphroditism. See under *Hermaphroditism*.
Pseudostrabismus. See under *Strabismus*
Psychological characteristics and needs of children, *Aug.*, 562
Psychologic testing in schizophrenia, *Aug.*, 703
Psychosis, autistic, *May*, 496-7
  symbiotic, *May*, 496-7; *Aug.*, 701
Psychosomatic factors and masturbation, *Feb.*, **111-18**
Psychotherapy, in mental retardation, *Aug.*, 679-80
  in schizophrenia, *May*, 507
Pubarche, premature, *Feb.*, 82
Puberty. See also *Adolescence*.
  precocious, *Feb.*, 71
    cerebral, *Feb.*, 73, 78
    constitutional, *Feb.*, 73, 75-9
    true, *Feb.*, 73-9
      treatment, experimental, *Feb.*, 87-91
  pseudoprecocious, *Feb.*, 80-87
  sexual precocity, *Feb.*, 71
    classification, *Feb.*, 72
    due to adrenal tumors, *Feb.*, 133 *ff.*
    due to ovarian tumor, *Feb.*, 136
    gynecologic aspects, *Feb.*, **71-93**
    iatrogenic, *Feb.*, 85-7
    isosexual, *Feb.*, 72
Puerperium in adolescence, management of, *Feb.*, 148
Pulmonary hypertension, hyperkinetic, *May*, 338
  idiopathic, *May*, **337-52**
  secondary, *May*, 339
Pulmonary stenosis vs. idiopathic pulmonary hypertension, *May*, 344
Pupils. See under *Eyes*.
Pyelitis. See *Pyelonephritis*.
Pyelonephritis vs. peritonitis, *Feb.*, 100
Pyosalpinx, *Feb.*, 102

Race in onset of menstruation, *Feb.*, 52
Radiation injury of eyes, *Feb.*, 223-4
Railway nystagmus. See *Nystagmus, optokinetic*.
Rape, *Feb.*, 45
Rauwolfia serpentina, in behavior disorders, *Aug.*, 580-82
  toxicity, *Aug.*, 589

Reaction, overcompensatory, in brain damage, *Aug.*, 695
undercompensatory, in brain damage, *Aug.*, 696
Reading disabilities, *May*, **513-22**
Rebellion. See *Behavior, rebellious.*
Recognition, need for, in adolescence, *Aug.*, 776-7, 783-4
Reflexes, pupillary, *Feb.*, 196
Renal. See *Kidneys.*
Reserpine. See *Rauwolfia serpentina.*
Respiratory disease virus, acute. See *Adenovirus.*
Respiratory distress syndrome, *May*, 267-8
Respiratory illness virus. See *Adenovirus.*
Respiratory tract, disease, acute, *May*, 302-303
infections, febrile, *May*, 303
Retention cyst of vulva, *Feb.*, 39
Retina, disorders, peripheral, *Feb.*, 200
fold, in retrolental fibroplasia, *Feb.*, 242
Retrolental fibroplasia, *Feb.*, **239-47**
active phase, *Feb.*, 240
cicatricial phase, *Feb.*, 241-2
oxygen in, mechanism of action, *Feb.*, 244-6
role of, *Feb.*, 242-4
proliferative stages, *Feb.*, 240
retinal stage, *Feb.*, 240
vascular stage, *Feb.*, 240
Retrolental mass in retrolental fibroplasia, *Feb.*, 242
Rheumatic fever, genetic counselling in, *May*, 487-8
Rickets, biochemical findings, *May*, 422
classification, *May*, 418, 419, 420
procedure, *May*, 421-3
clinical aspects, *May*, 425-38
cystine storage disease with, *May*, 436-7
definition, *May*, 417-20
deformities, orthopedic management, *May*, 438-9
diagnosis, and management, *May*, **417-41**
medical and surgical problems, *May*, 421
due to renal tubular acidosis, *May*, 438
due to tubular insufficiency, *May*, 427-8
etiology, *May*, 420
incidence, *May*, 423-4
nomenclature, *May*, 420-21
Rickets, pathogenesis, *May*, 424-5
physiological considerations, *May*, 424-5
renal, *May*, 426
vitamin D deficiency, *May*, 425
vitamin D-refractory, hypophosphatemic, *May*, 428-34
with aminoaciduria, *May*, 434-5
with aminoacidura and acidosis, *May*, 436
with hyperglycinuria, *May*, 437
Ring, esophageal. See under *Esophagus.*

Salivary chlorides in malabsorption syndrome, *May*, 363
Salpingitis, *Feb.*, 102
Sarcoidosis, Boeck's, uveitis due to, *Feb.*, 180, 183
Sarcoma botryoides, *Feb.*, 108
Schizophrenia, *May*, **493-512**; *Aug.*, **699-709**
atypical, *May*, 498
borderline, *May*, 498-9
environmental factors, *Aug.*, 705
etiology, *Aug.*, 704-705
genetic factors, *Aug.*, 704-705
pathogenesis, *Aug.*, 705-707
prognosis, *Aug.*, 707
relation to early infantile autism, *Aug.*, 721
symptoms, *Aug.* 699-704
preschizophrenic, *Aug.*, 701-704
treatment, *Aug.*, 707-708
vs. early infantile autism, *Aug.*, 728
vs. mental retardation, *Aug.*, 669, 670
School, failure in, in adolescents, *Aug.*, 785-6
phobia, *Aug.*, **645-66**
clinical manifestations, *Aug.*, 649-51
definition, *Aug.*, 646-8
family environment and, *Aug.*, 654-8
prevalence, *Aug.*, 648-9
symptoms, formation of, dynamics of, *Aug.*, 651-4
treatment, *Aug.*, 658-65
results, *Aug.*, 665
Secobarbital in eye injuries, *Feb.*, 204
Seconal. See *Secobarbital.*
Sediment, urinary, tests for, *May*, 365
Self-concern in adolescents, *Aug.*, 776
Seminiferous tubules, dysgenesis, *Feb.*, 130
chromosomal sex tests in, *May*, 388-90
treatment, *May*, 393
Separation anxiety, *Aug.*, 648
Septicemia. See *Bacteremia.*

Serpasil. See *Rauwolfia serpentina*.
Sex, anomalies, chromosomal sex tests in, *May*, 380–90
classification, *Feb.*, 120
congenital, *Feb.*, 121–33
diagnosis and management, *May*, **375–96**
treatment, *May*, 390–93
chromatin, relation to sex chromosomes, *May*, 377–80
chromosomal, tests of, *May*, 368–9, 375–7
in sex anomalies, *May*, 380–90
chromosomes, relation to sex chromatin, *May*, 377–80
development, abnormal, *Feb.*, **119–37**
heterosexual, postnatal, *Feb.*, 133–6
precocity. See under *Puberty*.
psychosomatic factors, *Feb.*, 111–15
Shock therapy in schizophrenia, *May*, 508
Silver protein in vulvovaginitis, nonspecific, *Feb.*, 44
Skin, biopsy, as test of chromosomal sex, *May*, 377
configurations, calculation of index, *May*, 539–41
digital patterns, *May*, 532–5
embryological development, *May*, 532
formulation, *May*, 532
in diagnosis of mongolism, *May*, **531–43**
palmar, *May*, 535–7
plantar, *May*, 537–9
practical applications, *May*, 541–2
printing, *May*, 532
of newborn, care of, *May*, 296
Sleep, disorders, *Aug.*, **629–43**
diagnosis, *Aug.*, 642–3
during preschool age, *Aug.*, 638–9
in first year, *Aug.*, 636–7
in second and third years, *Aug.*, 637–8
incidence, *Aug.*, 630
narcolepsy, *Aug.*, 642
prevention, *Aug.*, 632–6
treatment, *Aug.*, 642–3
nature of, *Aug.*, 629–31
patterns, normal, development of, *Aug.*, 631–2
restless, types of, *Aug.*, 639–40
significance, *Aug.*, 629–31
Sleepiness, excessive, *Aug.*, 641–2
Sleep tic, *Aug.*, 639
Sleep walking, *Aug.*, 641
Snellen charts in vision testing, *Feb.*, 233 *ff.*
Social factors prediction in juvenile delinquency, *Aug.*, 764
Social work, evaluation, in mental retardation, *Aug.*, 671–2
in mental retardation, *Aug.*, 680
Society, involvement in adoptions, *May*, 527–8
Sodium, effect on aldosterone secretion and excretion, *May*, 401, 402, 403
loss or restriction, *May*, 408
retention, and edema, diseases complicated by, *May*, 406–408
Sodium bicarbonate, in chemical burns of eyes, *Feb.*, 223
in mycotic infections of vagina, *Feb.*, 46
Somatotropin, effect on aldosterone secretion and excretion, *May*, 401
Somnambulism. See *Sleep walking*.
Somniloquy, *Aug.*, 639
Sparine. See *Promazine*.
Spasmus nutans, *Feb.*, 195
Speech, disorders, vs. schizophrenia, *May*, 505
evaluation, in mental retardation, *Aug.*, 672–3
therapy, in mental retardation, *Aug.*, 680–81
Spina bifida aperta, genetic counselling in, *May*, 476–7
Spine, anomalies, and alimentary duplications, *May*, **457–74**
embryogenesis, *May*, 468–72
Squint. See *Strabismus*.
Steroids in urine. See *Urine, 17-ketosteroids*.
Stilbestrol, in dysmenorrhea, *Feb.*, 60
in hermaphroditism, *May*, 391
in pseudohermaphroditism, *May*, 391
Stimulants, in behavior disorders, *Aug.*, 586–8
toxicity, *Aug.*, 590
Stomach, cardiospasm, vs. congenital esophageal stenosis, *May*, 453
Stool. See *Feces*.
Strabismus, *Feb.*, 153, 154
causes, *Feb.*, 155
comitant, *Feb.*, 163–8
convergent, accommodative, *Feb.*, 164–6
combined, *Feb.*, 166–7
nonaccommodative, acquired, *Feb.*, 164
congenital, *Feb.*, 163–4
divergent, *Feb.*, 167–8
explanation, to parents, *Feb.*, 154–6
to physicians, *Feb.*, 156–61
incidence, *Feb.*, 154

Strabismus, incomitant, *Feb.*, 163
latent, *Feb.*, 162–3
management, *Feb.*, **153–68**
manifest, *Feb.*, 163–8
paralytic, *Feb.*, 231
pseudostrabismus, *Feb.*, 161–2
treatment, *Feb.*, 156, 158–61, 161–8
types, *Feb.*, 154, 161–8
Streptomycin in eye injuries, perforating, *Feb.*, 218
Stress, allergy and, *Aug.*, 732–3
eating problems due to, *Aug.*, 600
Suavetil. See *Benactyzine*.
Subconjunctival. See under *Conjunctiva*.
Subdural. See under *Meninges*.
Sucking reflex in brain-damaged children, *Aug.*, 690
Sugar in urine. See under *Urine*.
Sulamyd. See *Sulfacetamide*.
Sulfacetamide in corneal abrasion, *Feb.*, 210
Sulfonamides, in gonorrheal vulvovaginitis, *Feb.*, 42
sulfisoxazole, in corneal abrasion, *Feb.*, 210
Surgery in strabismus, *Feb.*, 159
Suvren. See *Captodiamine*.
Sweat chlorides in malabsorption syndrome, *May*, 362–3
Sympathicogonioma, *Feb.*, 105, 106
Symptoms, gynecologic, examination for, *Feb.*, 28–33
Syphilis, congenital, uveitis due to, *Feb.*, 181, 182–3

Talking. See also *Speech*.
in sleep, *Aug.*, 639
Tay-Sachs disease. See *Idiocy, amaurotic*.
Teaching, reading disabilities due to, *May*, 516
Teen-age obstetrics, *Feb.*, **139–49**
Teeth examination in mental retardation, *Aug.*, 673
Temper tantrums, *Aug.*, 568–9
treatment, *Aug.*, 569
Tension. See also *Stress*.
premenstrual, in adolescence, *Feb.*, 60–61
Terrors, night, *Aug.*, 640
Testosterone. See under *Androgens*.
Tetracaine, for ocular foreign bodies, *Feb.*, 212
in examination of eye injuries, *Feb.*, 204
Thorax, chest x-ray, in idiopathic pulmonary hypertension, *May*, 341
Thorazine. See *Chlorpromazine*.
Thrombocytopenia, laboratory tests, *May*, 357–8
Thrush. See *Candidiasis*.
Tic, sleep, *Aug.*, 639
Tic de sommeil, *Aug.*, 639
Toilet training, eating problems due to, *Aug.*, 604
in constipation, *Aug.*, 755
Tolserol. See *Mephenesin*.
Toxemia in pregnancy. See under *Pregnancy*.
Toxoplasmosis, uveitis due to, *Feb.*, 181–2
Tracheo-esophageal fistula, *May*, 452–3
Tranquilizing drugs. See also specific drugs, as *Rauwolfia serpentina*, etc.
classification, *Aug.*, 575
dosage, *Aug.*, 575
in behavior disorders, *Aug.*, 571, 574–86
Trauma, abrasion, corneal, *Feb.*, 209–11
vulvovaginal, *Feb.*, 44–5
Trichomoniasis, *Feb.*, 42
vaginal, *Feb.*, 45
Trifluprom azine in behavior disorders, *Aug.*, 580
Trilafon. See *Perphenazine*.
Truancy vs. school phobia, *Aug.*, 647
Tuberculosis, uveitis due to, *Feb.*, 183
Tubules, seminiferous. See *Seminiferous tubules*.
Tumors. See also under specific organs and regions.
vaginal, *Feb.*, 39–40, 46–7
vulvar, *Feb.*, 39–40
Wilms'. See under *Kidneys, tumors*.
Turner's syndrome. See *Gonads, dysgenesis*.

Umbilicus of newborn, care of, *May*, 296
Urinary tract infection in newborn, diagnosis, *May*, 293
Urine, aldosterone excretion, mechanisms involved in, *May*, 400–404
constituents, abnormal, tests for, *May*, 364–5
incontinence, *Aug.*, 567–8
treatment, *Aug.*, 568
17-ketosteroids, chromatographic analysis, *May*, 365
laboratory tests, *May*, 364–7
sugar in, chromatographic analysis, *May*, 365

Uterus, cervix, cancer, *Feb.*, 108-109
in immaturity, *Feb.*, 13-16
hemorrhage, functional. See *Menstruation.*
in immaturity, *Feb.*, 16-18
tumors, *Feb.*, 108
Uveitis, *Feb.*, **173-83**
anterior, *Feb.*, 173
heterochromic, of Fuchs, *Feb.*, 179
endogenous, *Feb.*, 173, 174
exogenous, *Feb.*, 173
nonsuppurative, *Feb.*, 174
perforating injury as cause of, *Feb.*, 219, 220
posterior, *Feb.*, 173, 174
suppurative, *Feb.*, 174

Vaccine, adenovirus, use of, *May*, 304-305
Vagina, discharge, as symptom of pelvic disease, *Feb.*, 96
examination, in vulvovaginitis, nonspecific, *Feb.*, 43
foreign bodies in, *Feb.*, 46
examination for, *Feb.*, 31
hemorrhage, precocious, *Feb.*, 83-4
in immaturity, *Feb.*, 11-13
infections, *Feb.*, 45-6
mycotic, *Feb.*, 45-6
lesions, *Feb.*, 45-7
neoplasms, *Feb.*, 47
trichomoniasis, *Feb.*, 45
tumors, *Feb.*, 39-40, 46-7
Vaginitis, nonspecific, *Feb.*, 45
primary, *Feb.*, 102
Vertebrae. See *Spine.*
Vesprin. See *Triflupromazine.*
Vestibular disease, peripheral, nystagmus due to, *Feb.*, 191
Vestibular nucleus, lesions of, nystagmus due to, *Feb.*, 192-3
Vioform. See *Iodochlorhydroxyquin.*
Virus, acute respiratory disease. See *Adenovirus.*
adenoidal-pharyngeal-conjunctival. See *Adenovirus.*
APC, ARD, RI. See *Adenovirus.*
ECHO. See *ECHO virus.*
isolations from aseptic meningitis, *May*, 318
Virus, orphan. See *ECHO virus.*
respiratory illness. See *Adenovirus.*
Viscera, pelvic, infections of, *Feb.*, 102-104. See also under *Pelvis.*
Vision, acuity, defective, treatment of, *Feb.*, 156-8
binocular, *Feb.*, 153
central, acuity, *Feb.*, 185
defective, nystagmus due to, *Feb.*, 190
disturbances, reading disabilities due to, *May*, 515-16
fusion, *Feb.*, 154, 155
tests, *Feb.*, **231-8**
Visual-motor Gestalt test in brain damage, *Aug.*, 693
Vitamin D, deficiency, rickets due to, *May*, 425
effect on vitamin D-refractory rickets, *May*, 434
in hypophosphatemic vitamin D-refractory rickets, *May*, 430
in vitamin D deficiency rickets, *May*, 425
intoxication, *May*, 431
rickets and, *May*, 424
Vitamin D-refractory rickets. See *Rickets.*
Vitreous hemorrhage, *Feb.*, 216
Vulva, and external genitals, disorders of, *Feb.*, **35-49**
carcinoma, *Feb.*, 40
hypoestrogenic status in immaturity, *Feb.*, 5, 6
in immaturity, *Feb.*, 4-6
infectious granuloma, *Feb.*, 36
inflammation, *Feb.*, 35-6
neoplasms, benign, *Feb.*, 39
retention cyst, *Feb.*, 39
tumors, *Feb.*, 39-40
Vulvovaginal infections, *Feb.*, 40-44
Vulvovaginal lesions, *Feb.*, 40-45
Vulvovaginal trauma, *Feb.*, 44-5
Vulvovaginitis, *Feb.*, 40
gonorrheal, *Feb.*, 41-2
mycotic, *Feb.*, 42
nonspecific, *Feb.*, 42-4

Weaning, eating problems due to, *Aug.*, 598
Web, esophageal. See under *Esophagus.*
Wilms' tumors. See under *Kidneys, tumors.*